



Cleveland

Descaling Procedure-SteamCraft Ultra and Gemini Series

How Much DISSOLVE to Use

Model	Dissolve
Ultra 3	1/2 Gallon
Ultra 5	1 Gallon
Ultra 10 (Elec.)	1 Gallon (ea.)
Ultra 10 (Gas)	1½ Gallon
Gemini 6 & 10	1 Gallon (ea.)

1. Turn the unit OFF and open the doors:

This will drain and rinse the generator for about 3 minutes.

2. Turn the unit power back On:

The generator will begin to refill with water.

3. Select Timed with the Timed/Manual switch:

DO NOT start the timer, since you do not want to heat the water during descaling. Leave the doors open.

4. Remove descaling port cap and add with the specified amount of DISSOLVE: (See chart above)

Do this while the unit is refilling. The generators can take-up to 8 minutes to refill.

5. After refill has stopped, add extra tap water into the descaling port until liquid is seen entering the cooking cabinet. Note: Ultra 10 gas will have liquid coming out of the drain,

Adding extra water when descaling will raise the descaling solution higher than the normal fill level, allowing the DISSOLVE to work on sensors and surfaces above the water line

Note: Some SteamCraft Ultra models (the electric powered Ultra 10 and Gemini 6 and 10, for example) have two generators and two descaling ports. Both units should be descaled at the same time, using this procedure

6. Let the descaler soak in generator for approximately one hour:

7. After one hour, turn the unit power

Off: This will drain and rinse the generator for about 3 minutes.



8. After the 3-minute drain cycle completes, turn the unit back ON. After the filling has stopped, add water until liquid enters the cooking compartment (or drain for the ultra 10 gas), and then turn the unit OFF. This will drain and flush any residue from the water level control assembly. **Replace descaling cap.**

9. After the 3 minute drain cycle completes, Turn the unit ON and set the Timer for 20 minutes: Make sure the Time/Manual switch is in the timed setting and the doors are closed.

10. When the timer times out (after 20 minutes) turn the power Off:

This will drain and rinse the generator for about 3 minutes.

This ends the descaling procedure. You can now turn the unit back on and resume normal startup and cooking operations.

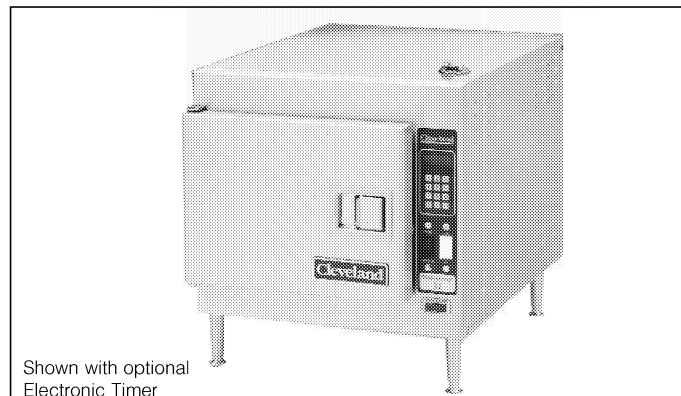
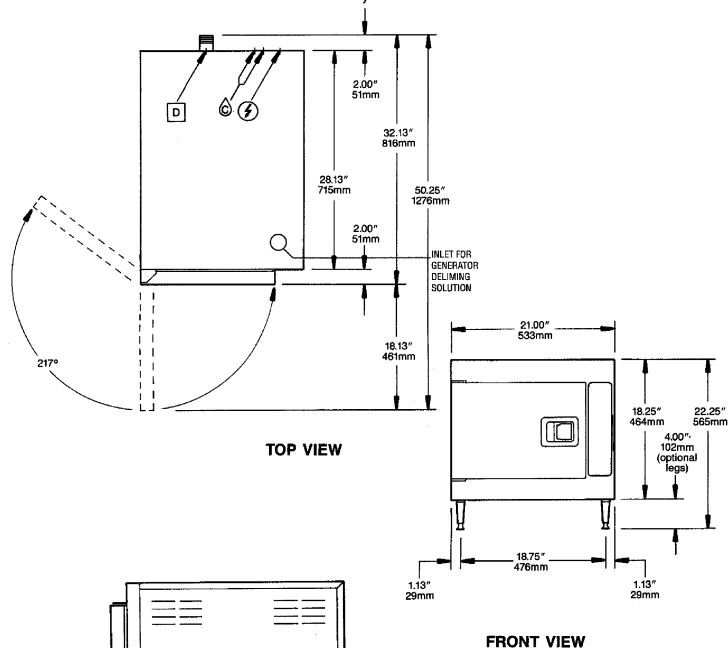
SteamCraft® Ultra 3

COUNTER TYPE DESIGN
PRESSURELESS CONVECTION STEAMER
Electric Steam Generator, 8 KW

MODEL: ☐ 21-CET-8

ITEM NUMBER _____

JOB NAME / NUMBER _____



SHORT FORM SPECIFICATION

Shall be CLEVELAND, SteamCraft® Ultra 3, one compartment, Counter-Type Steamer, Model 21-CET-8, ___ volts, 8.5 KW, ___ Hz. Heavy duty all Stainless Steel construction. Rear mounted, insulated Steam Generator with Remote Probe Type Water Level Controls and Automatic Steam Generator Blowdown with "Water Jet" Drain Cleaning feature.

WATER QUALITY REQUIREMENT

The recommended minimum water quality standards whether untreated or pre-treated, based upon 10 hours of use per day, and a Daily Blowdown, are as follows:

TOTAL DISSOLVED SOLIDS	less than 60 parts per million
TOTAL ALKALINITY	less than 20 parts per million
SILICA	less than 13 parts per million
pH FACTOR	greater than 7.5
CHLORINE	less than 30 parts per million

Consult a local water treatment specialist for an on site water analysis for recommendations concerning steam generator feed water treatment (if required), in order to remove or reduce harmful concentrations of minerals. The use of highly mineralized water will mean that more frequent servicing of the steam generator will be necessary. The fact that a water supply is potable is not proof that it will be suitable for the generator.

ELECTRIC ⚡				WATER 💧	DRAINAGE □	CLEARANCE
VOLTS	KW	1PH AMPS	3PH AMPS	Cold water: 35 psi minimum 60 psi maximum Two ½" I.D. Tubing: • one for Condenser • one for Steam Generator Unit comes with a 40 Mesh Water Strainer (installation required)	1½" N.P.T. tube Do not connect other units to this drain. Drain line must be vented. No PVC pipe for drain.	Right - 6.00" Left - 3.00" Rear - 3.00"
208	8.5	41	25			
220	8	35	21			
240	9	39	23			
440	8	18	11			
480	9	29	12			

Cleveland Range reserves right of design improvement or modification, as warranted.

Cleveland Range, LLC

Ph: 1-216-481-4900 Fx: 1-216-481-3782

1333 East 179th St., Cleveland, Ohio, U.S.A. 44110

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CLEVELAND RANGE 21CET8

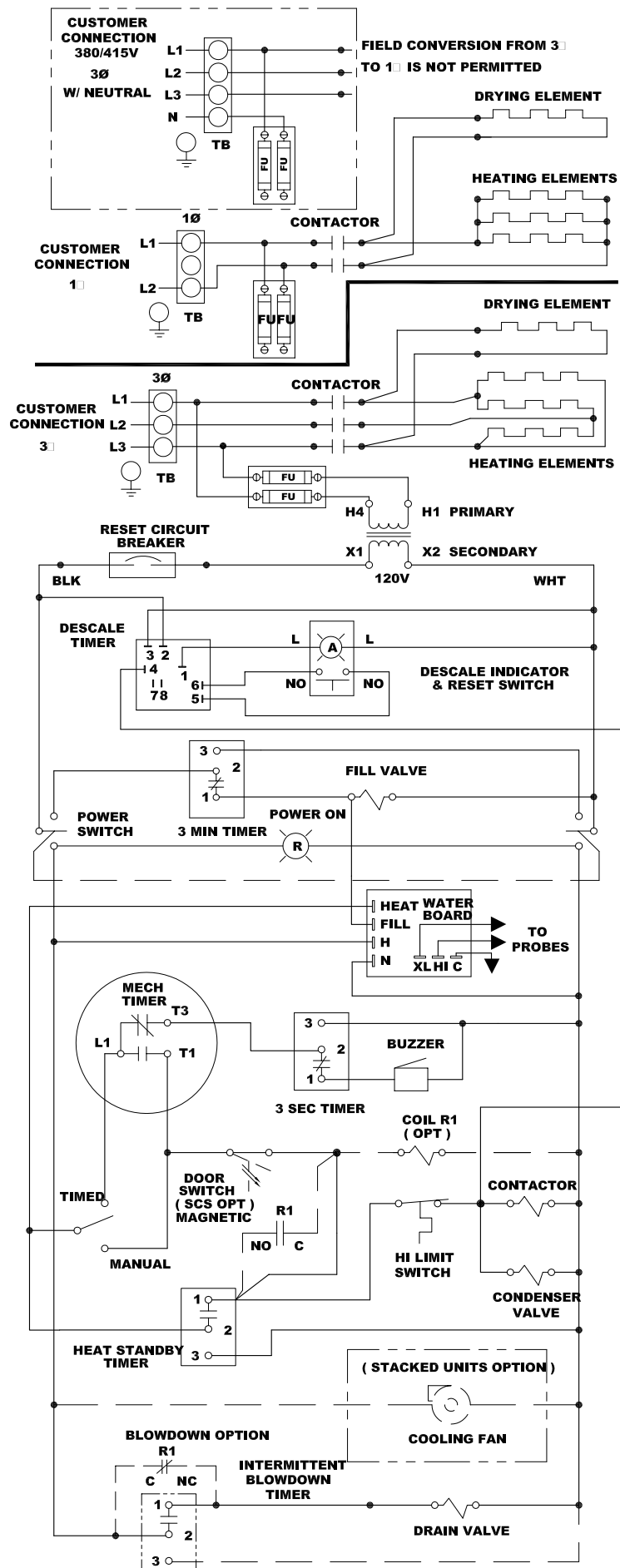
SEQUENCE OF OPERATIONS

Mechanical Timer

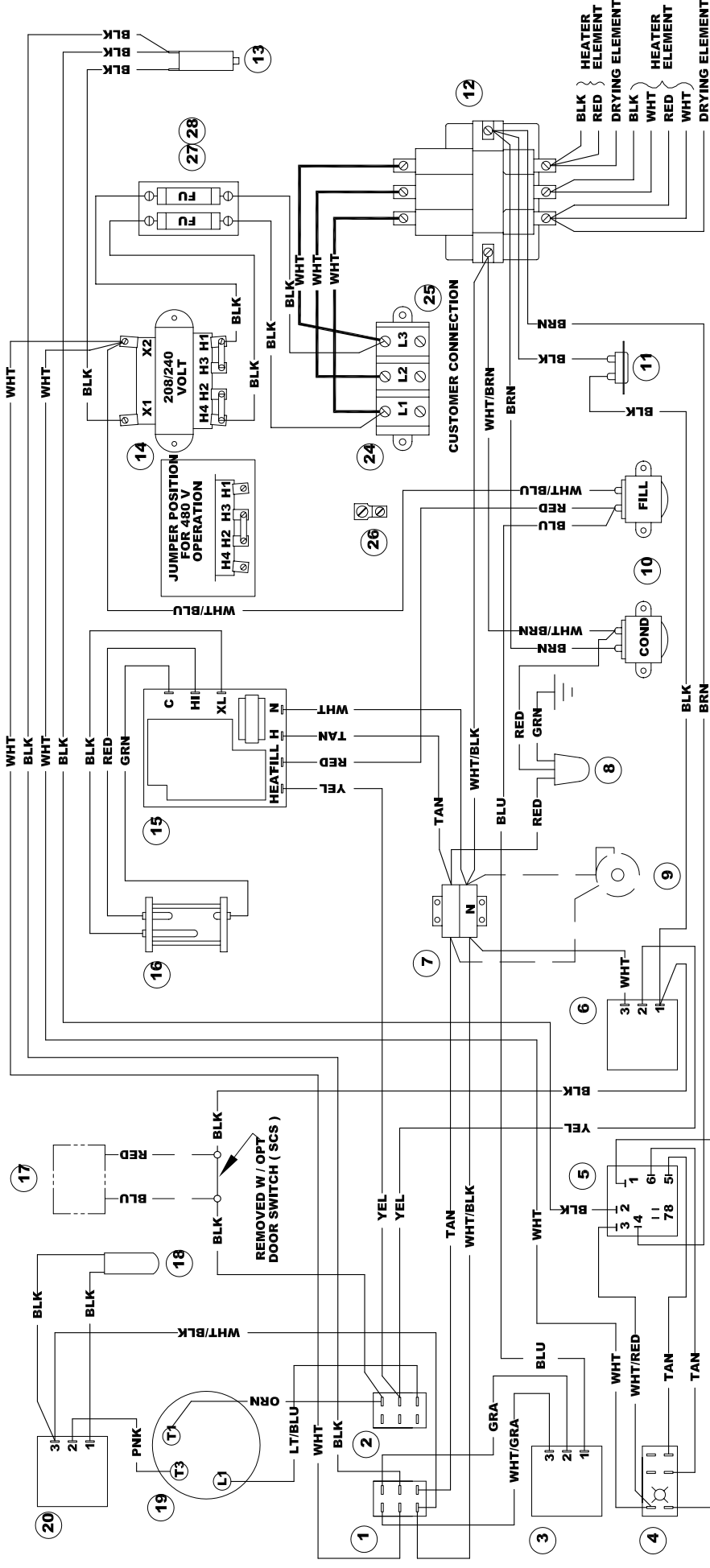
1. Supply power is sent to the primary of the main transformer.
 - 115 VAC is sent from the secondary of the main transformer to the on/off rocker,
2. To turn the unit on, depress the red on/off rocker switch.
 - 115 VAC is sent to the red 115 VAC light.
 - 115 VAC is sent to normally open drain valve closing it.
 - 115 VAC is sent to H and N on the water level board
3. With the water level board energized and no water in the generator
 - 5 seconds later 115 VAC is sent from the FILL terminal to the fill solenoid.
 - The fill solenoid opens and the generator fills through the drain valve.
 - The water fills to the low probe shorting it to ground
 - 115 VAC is sent from the HEAT terminal to the timed manual switch.
 - 115 VAC is sent to the heat standby timer which will energize 3 seconds every 4 minutes to maintain heat while unit is idle
4. When the timed/manual switch is in the timed position and time is on the timer
 - 115 VAC is sent from the timer through the door switch to the normally closed contacts of the high limit switch.
 - 115 VAC is then sent through the high limit to the coil of condensate solenoid
 - The condensate solenoid opens spraying cold water down the compartment drain.
 - 115 VAC is also sent through the high limit to the coil of the contactor.
 - 115 VAC is sent to the clean light timer.
 - When the clean light timer times down 115 VAC is sent to the clean light switch.
 - When the clean light switch is depressed the clean light timer is reset.
5. When the contactor coil is energized supply voltage is sent to both of the elements.
 - The elements are energized and the water is heated to steam.
 - Steam is directed to the cooking compartment.
6. When the timer times out 115 VAC is sent to the 3 second timer and then to the buzzer for 3 seconds.
 - 115 VAC is removed from the heat circuit.
7. When the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off.
8. After the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.

9. The red on/off switch is depressed and the unit is turned off.
 - 115 VAC is removed from the heat and timer circuit.
 - 115 VAC is removed from the normally open drain valve allowing the steamer to drain.
 - 115 VAC is sent to the 3-minute timer and the fill solenoid is energized for 3 minutes flushing the drain.

STEAMCRAFT 3.1 MECHANICAL TIMER (PROBE)



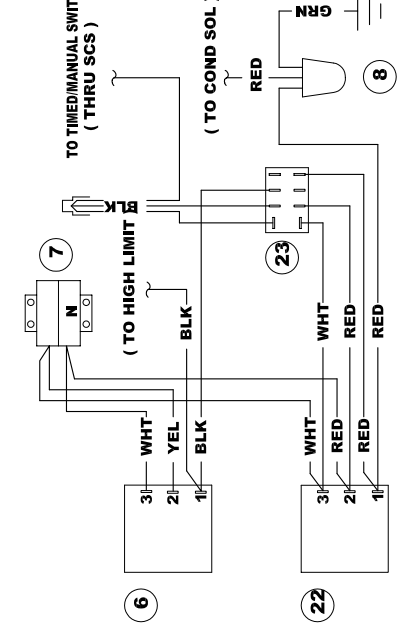
STEAMCRAFT 3.1 MECHANICAL TIMER (PROBE)



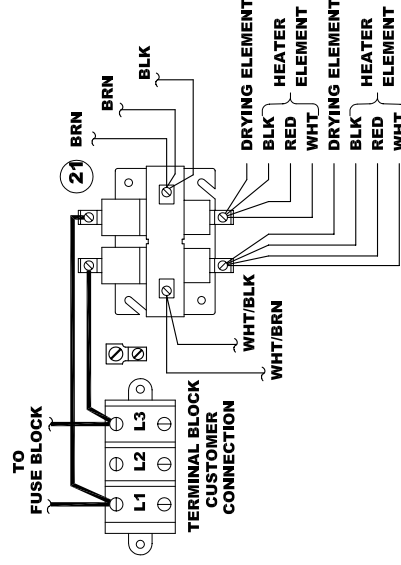
PARTS LIST:

- | | | | |
|----|---------------------------------|----|-------------------------------|
| 1 | 19993 - POWER SWITCH | 17 | 108880 - DOOR SW (MAGNETIC) |
| 2 | 104224 - TIMED / MANUAL SW | 18 | 41350 - BUZZER |
| 3 | 20478 - 3 MIN TIMER | 19 | 20476 - MECH TIMER |
| 4 | 20478 - 3 MIN TIMER | 20 | 20477 - 3 SEC TIMER |
| 5 | 19994 - DESCAL IND RESET SWITCH | 21 | 104234 - CONTACTOR |
| 6 | 106911 - DESCAL TIMER | 22 | 106541 - INTMT BLOWDOWN TIMER |
| 7 | 109239 - HEAT STANDBY TIMER | 23 | 105966 - RELAY |
| 8 | 44168 - TERMINAL BLOCK | 24 | 101540 - END SEGMENT |
| 9 | 22221 - DRAIN VALVE | 25 | 101541 - TERM BLOCK SECTIONAL |
| 10 | 107211 - COOLING FAN (OPT) | 26 | 20304 - GROUND LUG |
| 11 | 22218 - WATER SOL ENOIDS | 27 | 109380- 3.5 AMP, 600V FUSE |
| 12 | 109374 - FUSE BLOCK | 28 | 109374 - FUSE BLOCK |

INTERMITTENT BLOWDOWN OPTION



SINGLE PHASE WIRING CONFIGURATION



P106347 L

CLEVELAND RANGE 21CET8

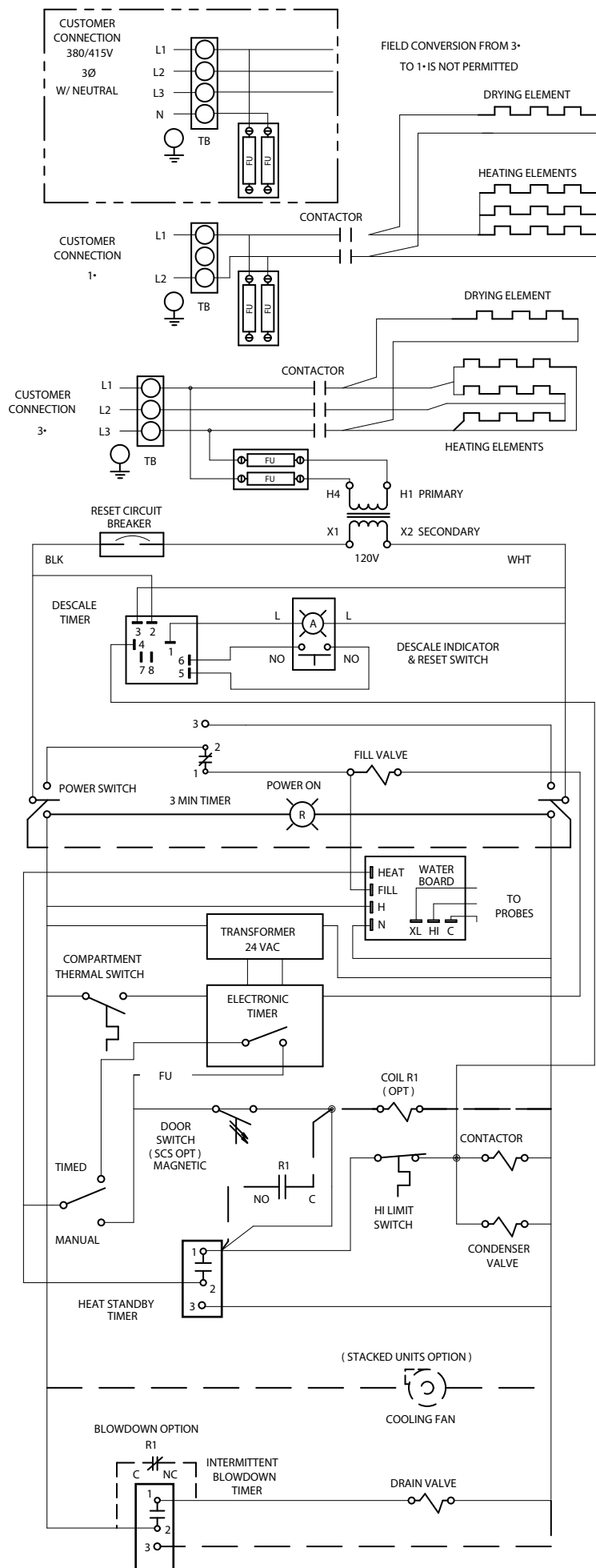
SEQUENCE OF OPERATIONS

Electronic Timer

1. Supply power is sent to the primary of the main transformer.
 - 115 VAC is sent from the secondary of the main transformer to the on/off rocker
2. To turn the unit on, depress the red on/off rocker switch.
 - 115 VAC is sent to the red indicator light.
 - 115 VAC is sent to normally open drain valve closing it.
 - 115 VAC is sent to H and N on the water level board
 - 115 VAC is sent to the 24VAC transformer for the electronic timer.
 - 115 VAC is sent to the normally open compartment thermostat switch.
3. With the water level board energized and no water in the generator
 - After a 5 second delay, 115 VAC is sent from the FILL terminal to the fill solenoid.
 - The fill solenoid opens and the generator fills through the drain valve.
 - The water fills to the low probe shorting it to ground
 - 115 VAC is sent from the HEAT terminal to the timed manual switch.
 - 115 VAC is sent to the heat standby timer which will energize 3 seconds every 4 minutes to maintain heat while unit is idle
4. When the timed/manual switch is in the timed position and time is on the timer
 - 115 VAC is sent from the timer through the optional door switch to the normally closed contacts of the high limit
 - 115 VAC is then sent through the high limit to the coil of condensate solenoid and the coil of the contactor.
 - 115 VAC is sent to the clean light timer.
 - When the clean light timer times down 115 VAC is sent to the clean light switch.
 - When the clean light switch is depressed the clean light timer is reset.
5. When the contactor is energized supply voltage is sent to both the Steam and Drying elements.
 - Steam is energized and sent to the cooking compartment.
 - When the cooking compartment reaches 193 degrees the compartment thermostat closes sending 115 VAC to the timer.
 - The timer will then begin counting down.
 - When the timer times down a buzzer will sound and the timer will open removing 115 VAC from the heat circuit.
6. When the water level reaches the high probe 115 VAC is removed from the FILL terminal and the fill solenoid is turned off.

7. After the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
8. The red on/off switch is depressed and the unit is turned off.
 - 115 VAC is removed from the timer and heat circuits.
 - 115 VAC is removed from the normally open drain valve allowing the steamer to drain.
 - 115 VAC is sent to the 3 minute timer and the fill solenoid is energized for 3 minutes flushing the drain.

STEAMCRAFT 3.1 ELECTRONIC TIMER (PROBE)



WHT BLK BLK WHT WHT BLK

13

14

208/240 VOLT

X1 X2 H4 H2 H3 H1

JUMPER POSITION FOR 120/240 VOLT OPERATION

H4 H2 H3 H1

WHT/BLU

15

HEATFILL H N

C HI XL

BLK RED GRN

16

17

REMOVED W / OPTIONAL DOOR SWITCH (SCS)

BLK

18

PRP

19

20

WHT/BLK

BLK WHT

21

22

23

24

25

26

27

28

29

30

CUSTOMER CONNECTION

WHT/BLK

WHT/BLU

BLU

RED

WHT/BRN

BRN

10

FILL

11

COND

12

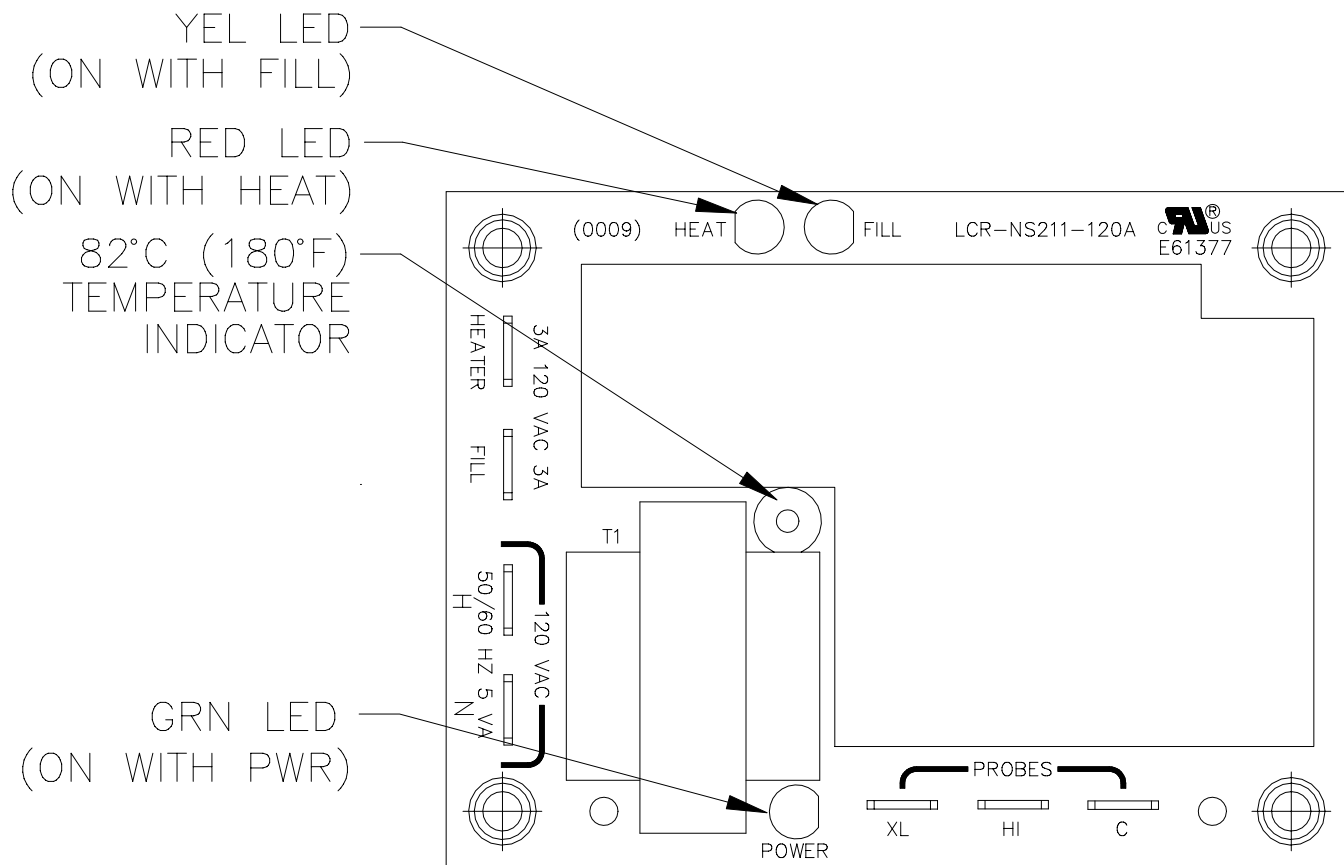
BLK BLK RED BLK WHT WHT

HEATER ELEMENT DRYING ELEMENT HEATER ELEMENT DRYING ELEMENT

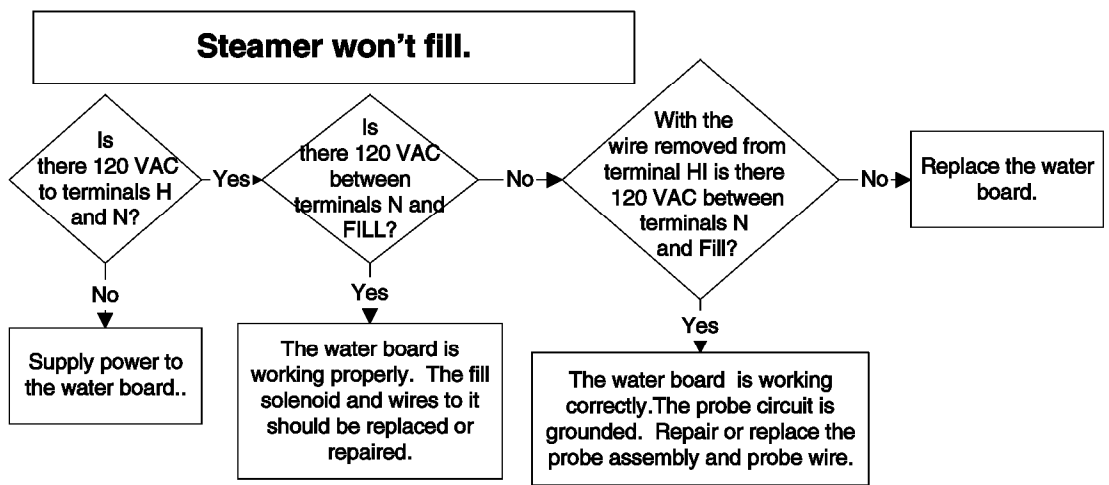
SINGLE PHASE WIRING CONFIGURATION

- [illegible]

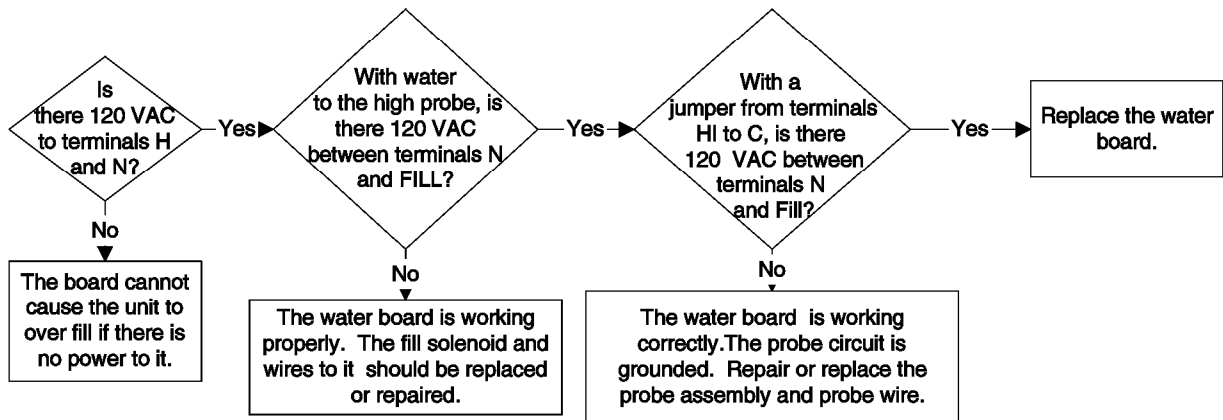
Atmospheric Water Level Board 107241



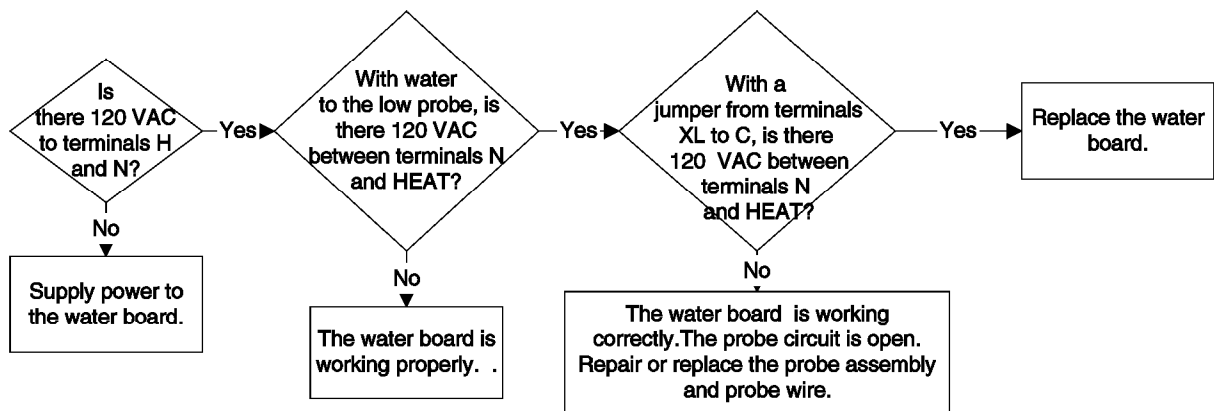
**PROBLEM:
Water board (107241)
for Atmospheric
Generators**



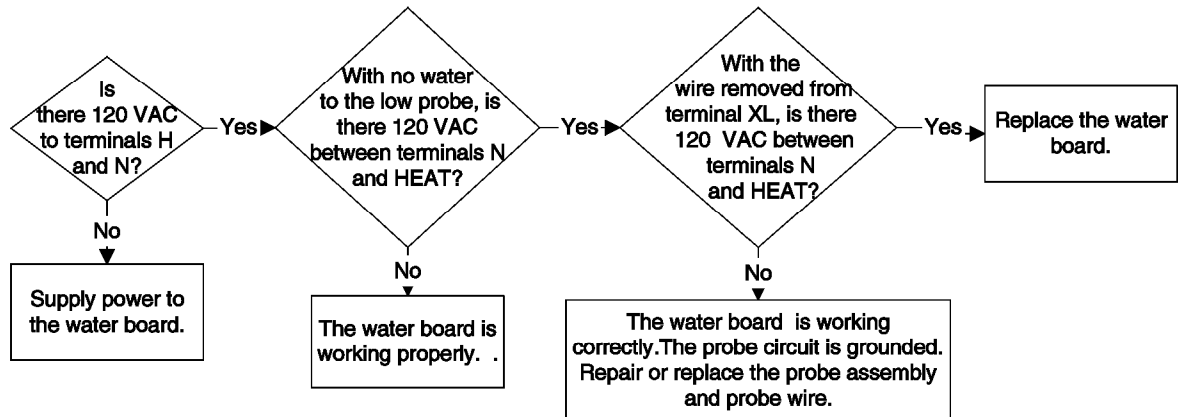
Steamer over fills



Steamer Won't Heat

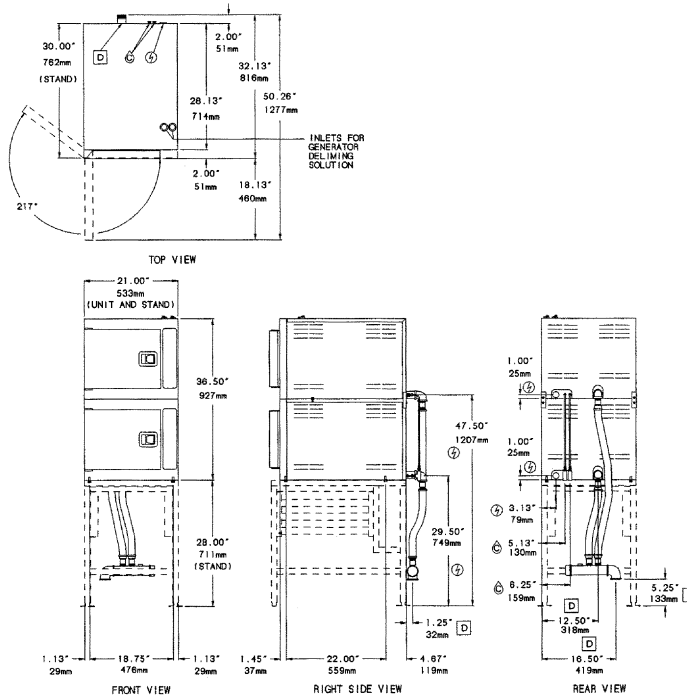


Steamer Dry Fires



SteamCraft® Ultra 3 Stacked

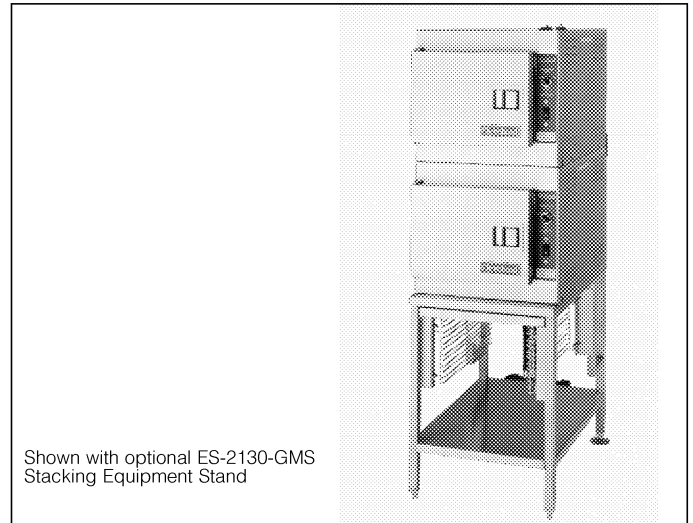
TWO COMPARTMENT
TWIN ELECTRIC STEAM GENERATOR
8 KW EACH



MODEL: ☐ (2)21-CET-8

ITEM NUMBER _____

JOB NAME / NUMBER _____



SHORT FORM SPECIFICATION

Shall be CLEVELAND, Two compartment, SteamCraft® Ultra 3 Stacked, Floor model steamer, Model (2)21-CET-8, _____ Volts, _____ Phase. 60 minute mechanical timer, Steam Standby mode. Heavy duty all stainless steel construction. Rear mounted, insulated steam generator with Remote Probe Type Water Level Controls and Automatic Steam Generator. Blowdown with "Water Jet" drain cleaning feature.

***Note:** The diagrams above are shown with the model 2-21-CET-8-GMS mounted on the optional ES-2130-GMS Stacking Equipment Stand.

ELECTRIC ⚡ ⚡				WATER 💧	DRAINAGE <input type="checkbox"/>	CLEARANCE
Two separate electrical connections are required				Cold water: 35 psi minimum 60 psi maximum	1½" Dia. Do not connect any other units to this drain. Drain line must be vented. No PVC pipe for drain.	Right - 12.00" Left - 3.00" Rear - 3.00"
VOLTAGE	KW each / total	1PH AMPS each / total	3PH AMPS each / total	Two ¾" I.D. Tubing: • one for Condenser • one for Steam Generator Unit comes with a 40 Mesh Water Strainer (installation required)		
208	8.5 / 17	41 / 82	25 / 50			
220	8.0 / 16	35 / 70	21 / 42			
240	9.0 / 18	39 / 78	23 / 46			
440	8.0 / 16	18 / 36	11 / 22			
480	9.0 / 18	29 / 58	12 / 24			

Cleveland Range reserves right of design improvement or modification, as warranted.

WATER QUALITY REQUIREMENT

The recommended minimum water quality standards whether untreated or pre-treated, based upon 10 hours of use per day, and a daily Blowdown, are as follows:

TOTAL DISSOLVED SOLIDS	less than 60 parts per million
TOTAL ALKALINITY	less than 20 parts per million
SILICA	less than 13 parts per million
pH FACTOR	greater than 7.5

Consult a local water treatment specialist for an on-site water analysis for recommendations concerning steam generator feed water treatment (if required), in order to remove or reduce harmful concentrations of minerals.

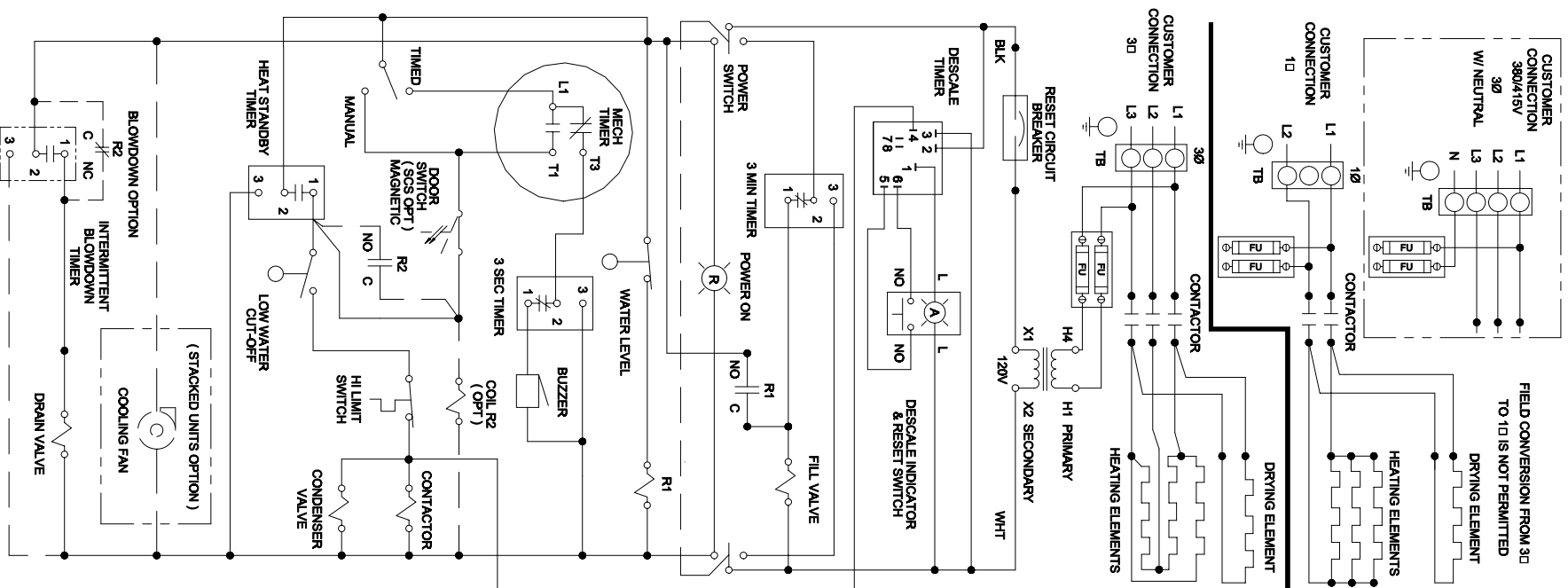
Cleveland Range, LLC

Ph: 1-216-481-4900 Fx: 1-216-481-3782

1333 East 179th St., Cleveland, Ohio, U.S.A. 44110

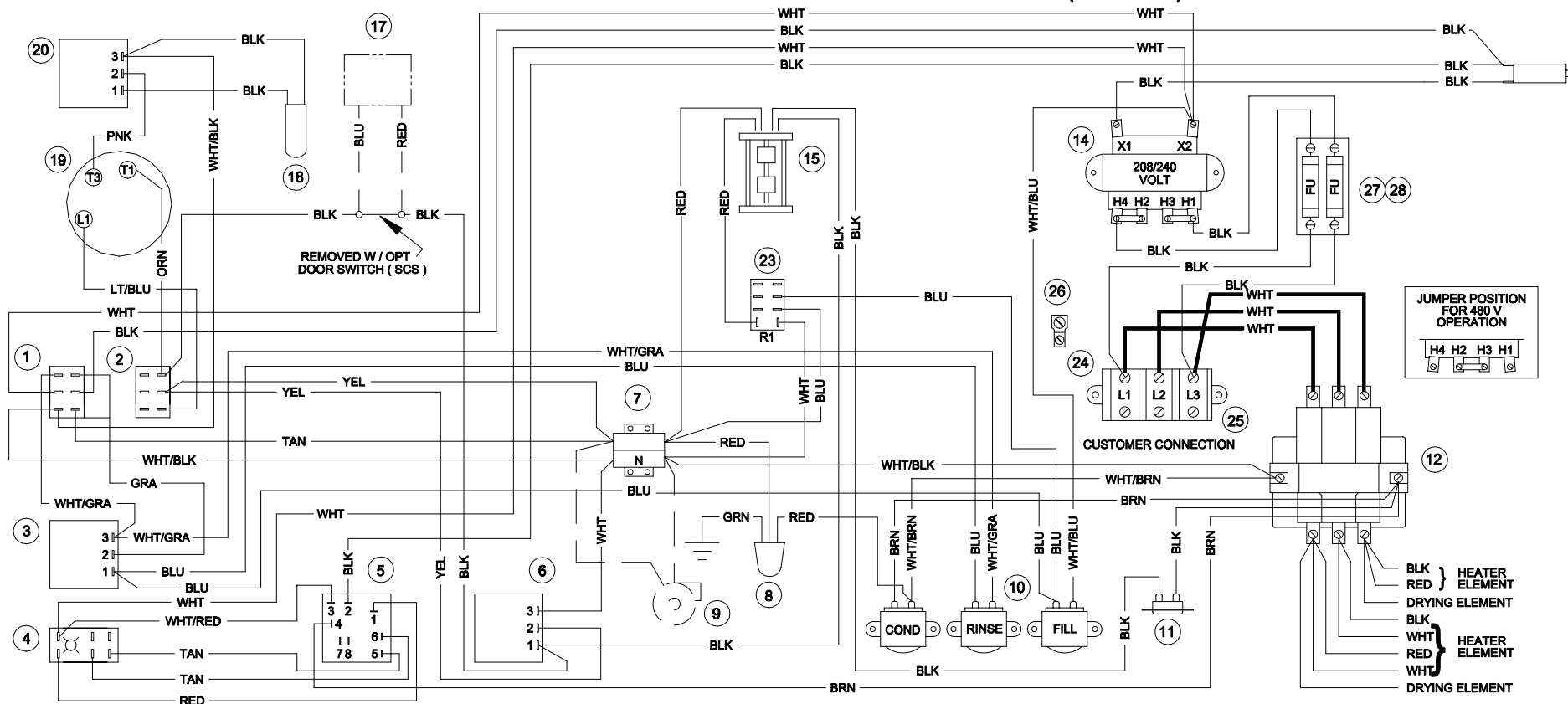
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STEAMCRAFT 3.1 MECHANICAL TIMER (FLOAT)

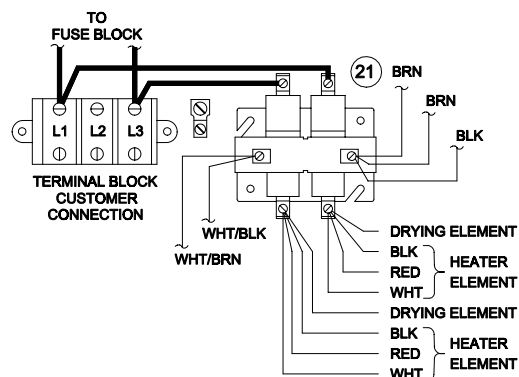


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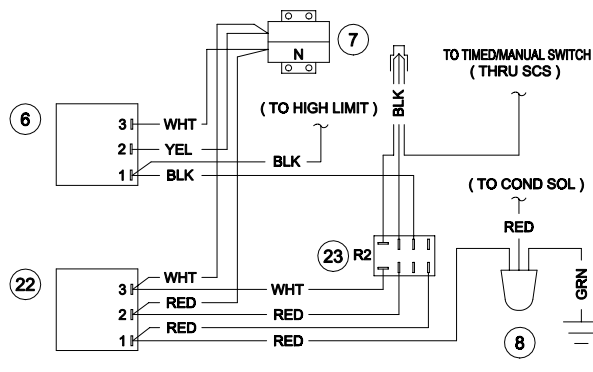
STEAMCRAFT 3.1 MECHANICAL TIMER (FLOAT)



SINGLE PHASE WIRING CONFIGURATION



INTERMITTENT BLOWDOWN OPTION



PARTS LIST:

- | | |
|------------------------------------|----------------------------------|
| 1 19993 - POWER SWITCH | 17 108880 - DOOR SW (MAGNETIC) |
| 2 104224 - TIMED / MANUAL SW | 18 41350 - BUZZER |
| 3 20478 - 3 MIN TIMER | 19 20476 - MECH TIMER |
| 4 19994 - DESCALE IND RESET SWITCH | 20 20477 - 3 SEC TIMER |
| 5 106911 - DESCALE TIMER | 21 104234 - CONTACTOR |
| 6 109239 - HEAT STANDBY TIMER | 22 106541 - INTMT BLOWDOWN TIMER |
| 7 44168 - TERMINAL BLOCK | 23 105968 - RELAY |
| 8 22221 - DRAIN VALVE | 24 101540 - END SEGMENT |
| 9 107211 - COOLING FAN (OPT) | 25 101541 - TERM BLOCK SECTIONAL |
| 10 22218 - WATER SOLENOIDS | 26 20304 - GROUND LUG |
| 11 103731 - HI LIMIT SWITCH | 27 109374 - FUSE BLOCK |
| 12 300022 - CONTACTOR | 28 109380 - FUSE 3.5A 600V |
| 13 108331 - RESET CIRCUIT BRKR | |
| 14 20535 - TRANSFORMER | |
| 15 103726 - FLOAT | |
| 16 | |



Convection Steamers

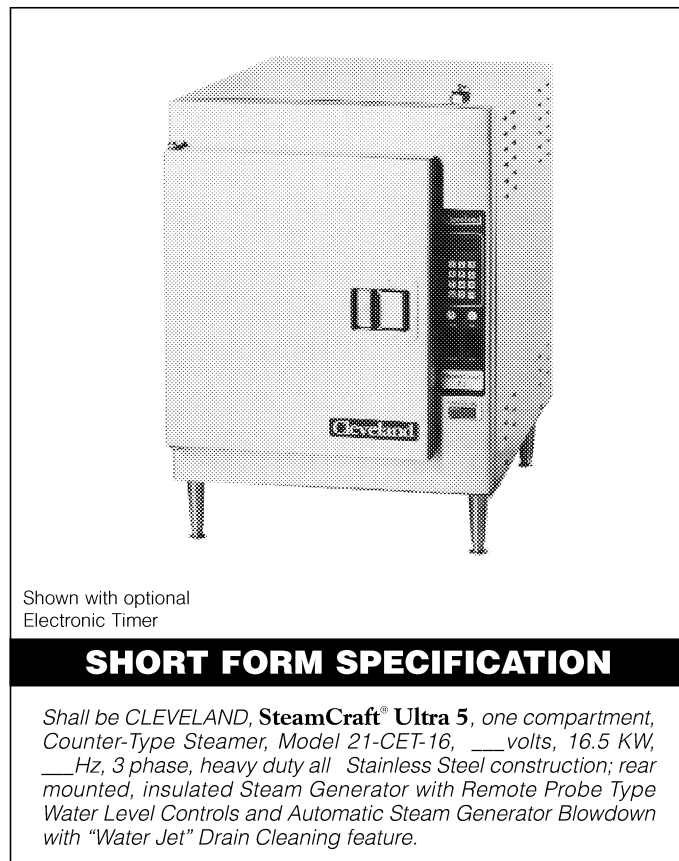
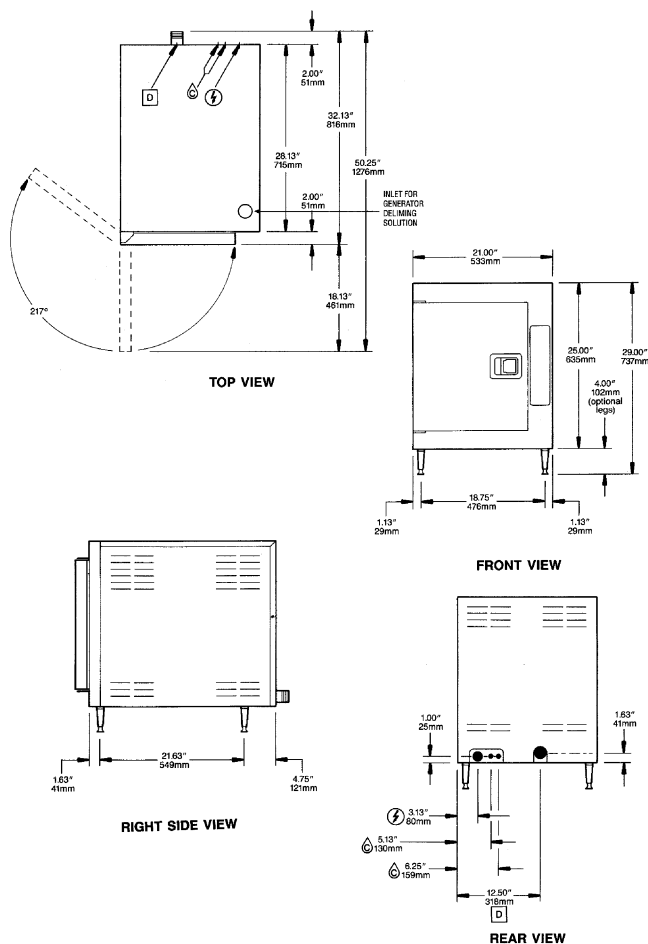
SteamCraft® Ultra 5

COUNTER TYPE DESIGN
PRESSURELESS CONVECTION STEAMER
Electric Steam Generator, 16 KW

MODEL: ☐ 21-CET-16

ITEM NUMBER _____

JOB NAME / NUMBER _____



SHORT FORM SPECIFICATION

Shall be CLEVELAND, SteamCraft® Ultra 5, one compartment, Counter-Type Steamer, Model 21-CET-16, ___ volts, 16.5 KW, ___ Hz, 3 phase, heavy duty all Stainless Steel construction; rear mounted, insulated Steam Generator with Remote Probe Type Water Level Controls and Automatic Steam Generator Blowdown with "Water Jet" Drain Cleaning feature.

WATER QUALITY REQUIREMENT

The recommended minimum water quality standards whether untreated or pre-treated, based upon 10 hours of use per day, and a Daily Blowdown, are as follows:

TOTAL DISSOLVED SOLIDS	less than 60 parts per million
TOTAL ALKALINITY	less than 20 parts per million
SILICA	less than 13 parts per million
pH FACTOR	greater than 7.5
CHLORINE	less than 30 parts per million

Consult a local water treatment specialist for an on site water analysis for recommendations concerning steam generator feed water treatment (if required), in order to remove or reduce harmful concentrations of minerals. The use of highly mineralized water will mean that more frequent servicing of the steam generator will be necessary. The fact that a water supply is potable is not proof that it will be suitable for the generator.

ELECTRIC ⚡			WATER 💧
VOLTS	KW	3PH AMPS	Cold water: 35 psi minimum 60 psi maximum Two ½" I.D. Tubing: • one for Condenser • one for Steam Generator Unit comes with a 40 Mesh Water Strainer (installation required)
208	16.5	46	
220	15	40	
240	18	44	
440	15	20	
480	18	22	
DRAINAGE [D]			CLEARANCE
1½" N.P.T. tube Do not connect other units to this drain. Drain line must be vented. No PVC pipe for drain.			Right - 6.00" Left - 3.00" Rear - 3.00"

Cleveland Range reserves right of design improvement or modification, as warranted.

Cleveland Range, LLC
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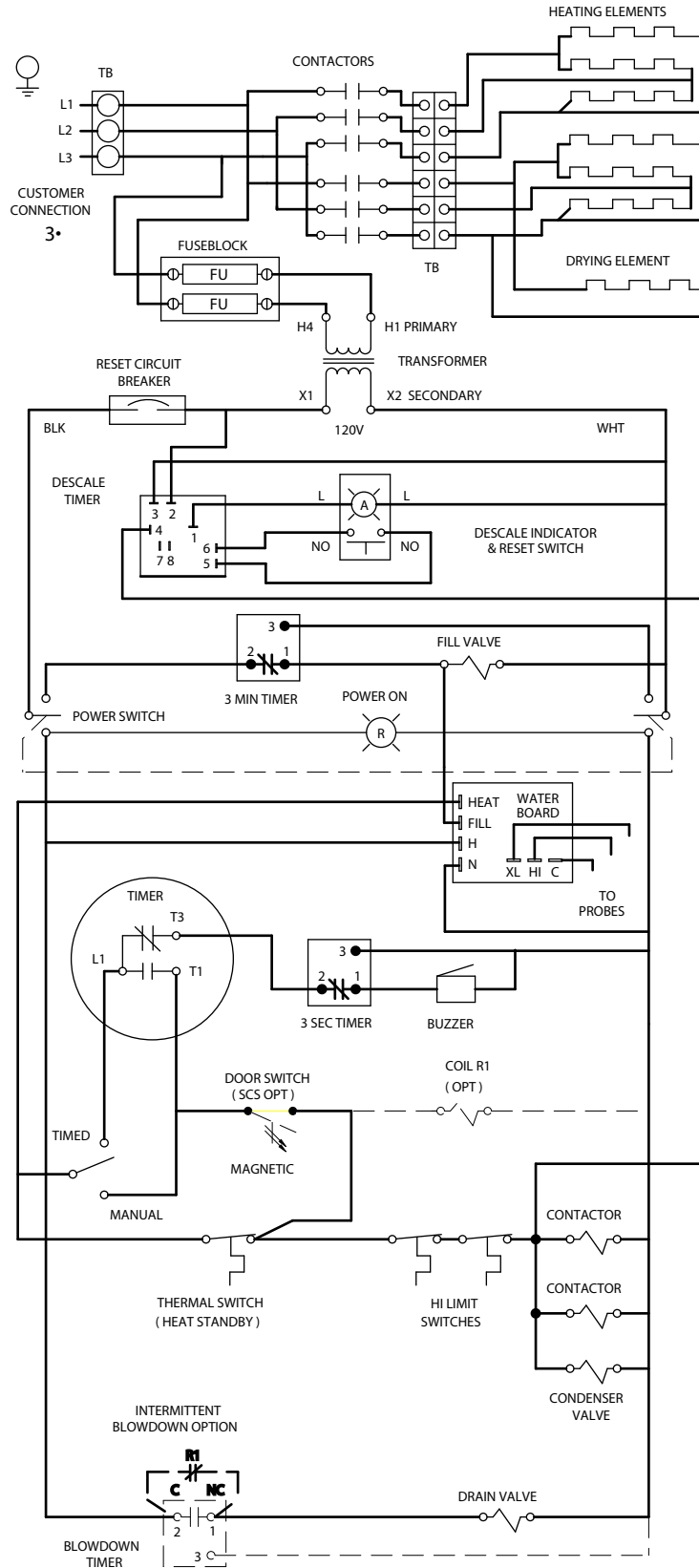
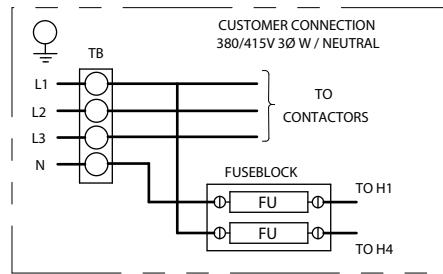
1333 East 179th St., Cleveland, Ohio, U.S.A. 44110
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CLEVELAND RANGE 21CET16
SEQUENCE OF OPERATIONS
Mechanical Timer
With preheat thermostat

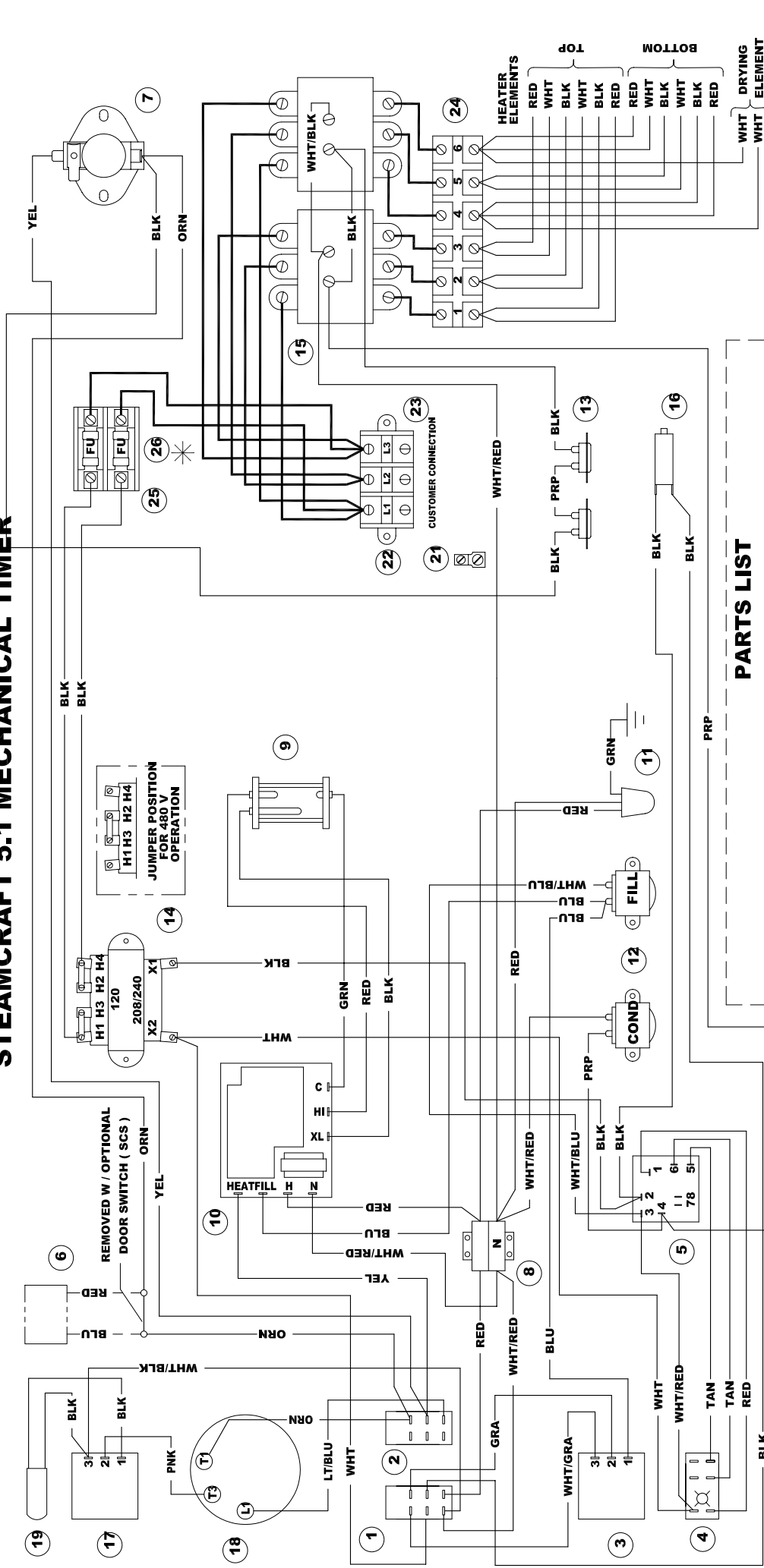
1. Supply power is sent to the primary of the main transformer.
 - 115 VAC is sent from the secondary of the main transformer to the on/off rocker,
2. To turn the unit on, depress the red on/off rocker switch.
 - 115 VAC is sent to the red indicator light.
 - 115 VAC is sent to the normally open drain valve closing it.
 - 115 VAC is sent to H and N of the water level board
3. With the water level board energized and no water in the generator
 - After a 5 second delay, 115 VAC is sent from the FILL terminal to the fill solenoid.
 - The fill solenoid opens and the generator fills through the drain valve.
 - The water fills to the low probe shorting it to ground
 - 115 VAC is sent from the HEAT terminal to the timed manual switch.
 - 115 VAC is sent to the preheat thermostat.
 - 115 VAC is then sent through the high limit to the coil of condensate solenoid.
 - The condensate solenoid opens sending cold water down the compartment drain.
 - 115 VAC is also sent through the high limit to the coil of the contactor.
 - When the contactor is energized supply voltage is sent to both of the elements.
 - The heat circuit will stay energized until the preheat thermostat opens at 185 degrees.
4. When the timed/manual switch is in the timed position and time is on the timer
 - 115 VAC is sent from the timer through the optional door switch to the normally closed contacts of the high limit
 - 115 VAC is then sent through the high limit to the coil of condensate solenoid and the coil of the mercury contactor.
 - 115 VAC is sent to the clean light timer.
 - When the clean light timer times down 115 VAC is sent to the clean light switch.
 - When the clean light switch is depressed the clean light timer is reset.
5. When the contactor is energized supply voltage is sent to both of the elements.
6. When the timer times out 115 VAC is sent to the 3 second timer and then to the buzzer for 3 seconds.
7. When the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off.

8. After the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
9. The red on/off rocker switch is depressed and the unit is turned off.
 - 115 VAC is removed from the timer and heat circuits.
 - 115 VAC is removed from the normally open drain valve allowing the steamer to drain.
 - 115 VAC is sent to the 3-minute timer and the fill solenoid is energized for 3 minutes flushing the drain.

STEAMCRAFT 5.1 MECHANICAL TIMER



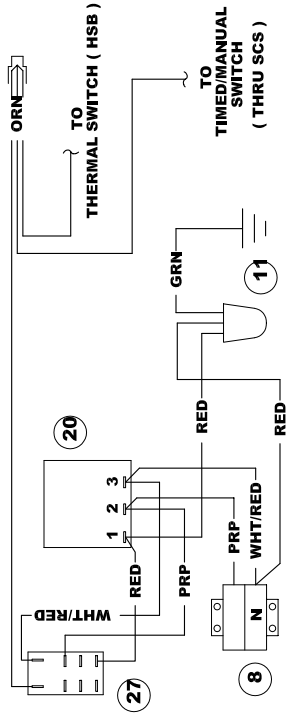
STEAMCRAFT 5.1 MECHANICAL TIMER



PARTS LIST

- | | | | | | |
|----|-------------------------------------|----|--------------------------------|----|--|
| 1 | 19993 - POWER SWITCH | 12 | 22218 - WATER SOLENOIDS | 23 | 101541 - TERMINAL BLOCK SECTIONAL |
| 2 | 104224 - TIMED/MANUAL SWITCH | 13 | 103731 - HI LIMIT SWITCHES | 24 | 109240 - 6 POLE TERMINAL BLOCK |
| 3 | 20478 - 3 MIN TIMER | 14 | 20535 - TRANSFORMER | 25 | 109374 - FUSEBLOCK |
| 4 | 19994 - DESCALER INDICATOR RESET SW | 15 | 103905 - CONTACTORS | 26 | 109380 - FUSE, 3.5 A (FOR 208 V & 240 V UNITS) |
| 5 | 106911 - DESCALER TIMER | 16 | 108331 - RESET CIRCUIT BREAKER | 27 | 105966 - RELAY |
| 6 | 108880 - DOOR SW (MAGNETIC) | 17 | 20477 - 3 SEC TIMER | | |
| 7 | 105789 - THERMAL SWITCH (HSB) | 18 | 20476 - MECHANICAL TIMER | | |
| 8 | 44168 - TERMINAL BLOCK | 19 | 41350 - BUZZER | | |
| 9 | 107239 - PROBE | 20 | 106541 - INTMT BLOWDOWN TIMER | | |
| 10 | 107241 - WATER BOARD | 21 | 20304 - GROUND LUG | | |
| 11 | 22221 - DRAIN VALVE | 22 | 101540 - END SEGMENT | | |

INTERMITTENT BLOWDOWN OPTION



NOTE: HEAVY WIRE LINES INDICATES 12 AWG HI - TEMP WIRE

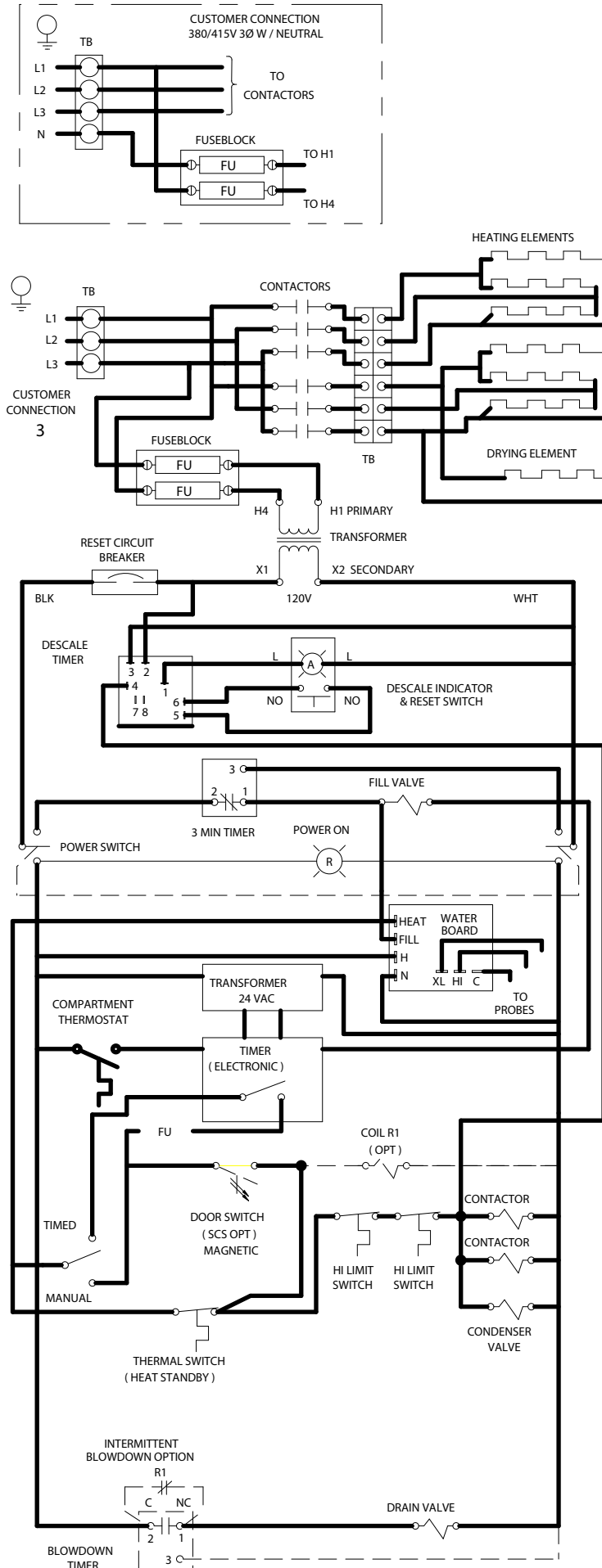
*(SEE RATING PLATE) P106380 F

CLEVELAND RANGE 21CET16
SEQUENCE OF OPERATIONS
Electronic Timer
With preheat thermostat

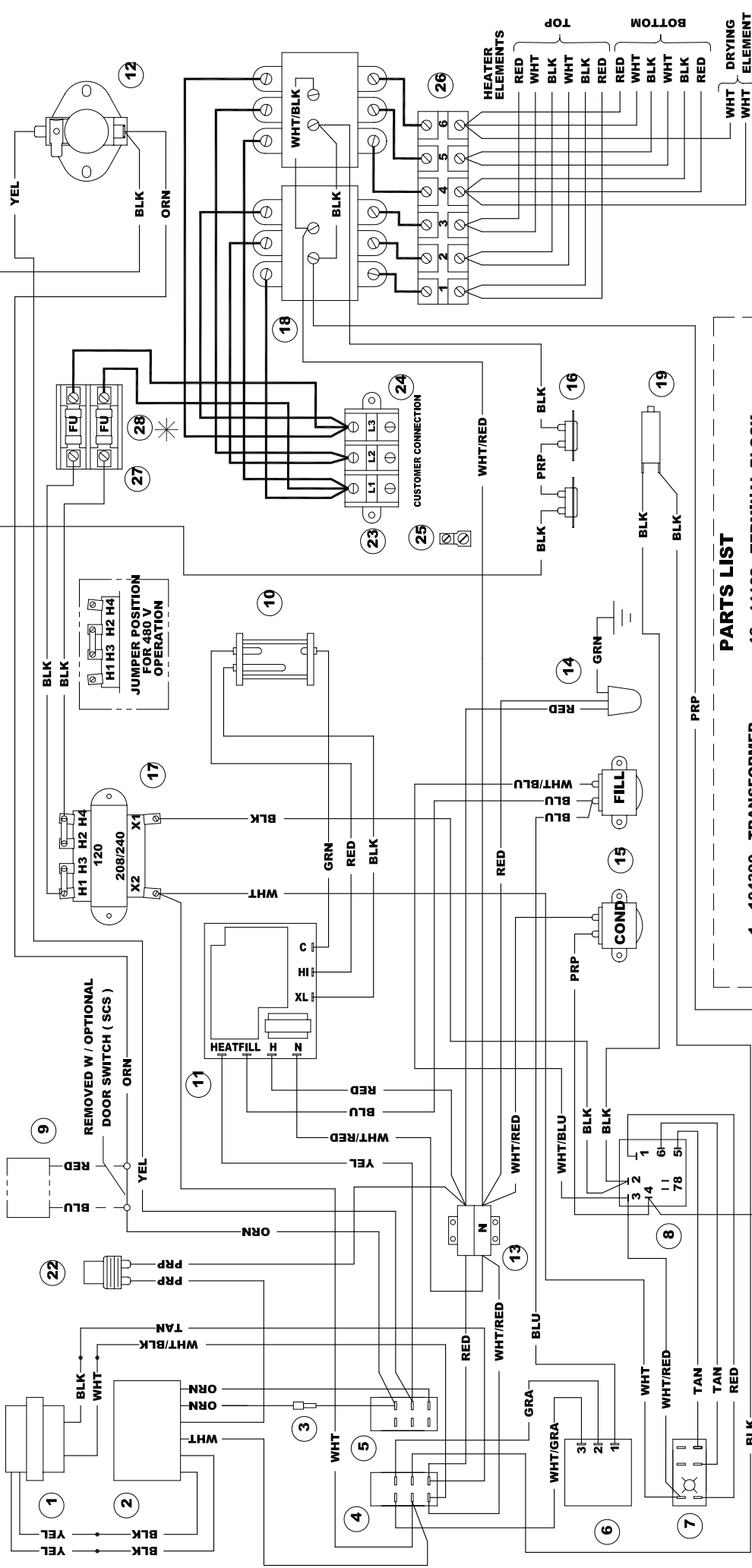
1. Supply power is sent to the primary of the main transformer.
 - 115 VAC is sent from the secondary of the main transformer to the on/off rocker,
2. To turn the unit on, depress the red on/off rocker switch.
 - 115 VAC is sent to the red indicator light.
 - 115 VAC is sent to the normally open drain valve closing it.
 - 115 VAC is sent to H and N of the water level board
 - 115 VAC is sent to the 24 VAC transformer for the electronic timer.
 - 115 VAC is sent to the normally open compartment thermostat switch.
3. With the water level board energized and no water in the generator
 - After a 5 second delay 115 VAC is sent from the FILL terminal to the fill solenoid.
 - The fill solenoid opens and the generator fills through the drain valve.
 - The water fills to the low probe shorting it to ground
 - 115 VAC is sent from the HEAT terminal to the timed manual switch.
 - 115 VAC is sent to the preheat thermal switch.
 - 115 VAC is then sent through the high limit to the coil of condensate solenoid.
 - The condensate solenoid opens and cold water is sent down the compartment drain.
 - 115 VAC is also sent through the high limit to the coil of the contactor.
 - When the contactor is energized supply voltage is sent to both of the elements.
 - The heat circuit will stay energized until the preheat thermostat reaches 185 degrees.
4. When the timed/manual switch is in the timed position and time is on the timer
 - 115 VAC is sent from the timer through the door switch to the normally closed contacts of the high limit
 - 115 VAC is then sent through the high limit to the coil of condensate solenoid and the coil of the contactor.
 - 115 VAC is sent to the clean light timer.
 - When the clean light timer times down 115 VAC is sent to the clean light switch.
 - When the clean light switch is depressed the clean light timer is reset.
5. When the contactor is energized supply voltage is sent to both of the elements.
 - Steam is energized and sent to the cooking compartment.
 - When the cooking compartment reaches 193 degrees the compartment thermostat closes sending 115 VAC to the timer.
 - The timer will then begin counting down.

- When the timer times down a buzzer will sound and the timer will open removing 115 VAC from the heat circuit.
6. When the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off.
 7. After the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
 8. The red on/off rocker switch is depressed and the unit is turned off.
 - 115 VAC is removed from the timer and heat circuit.
 - 115 VAC is removed from the normally open drain valve allowing the steamer to drain.
 - 115 VAC is sent to the 3-minute timer and the fill solenoid is energized for 3 minutes flushing the drain.

STEAMCRAFT 5.1 ELECTRONIC TIMER



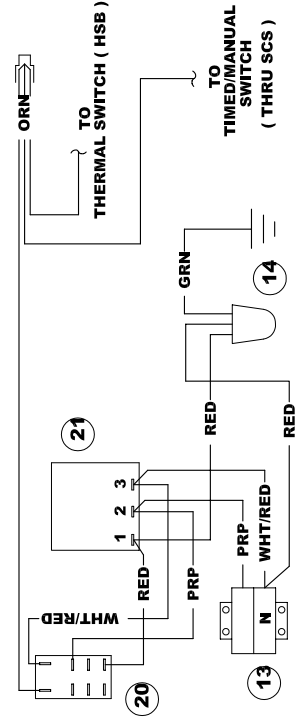
STEAMCRAFT 5.1 ELECTRONIC TIMER



PARTS LIST

1	104390 - TRANSFORMER	13	44168 - TERMINAL BLOCK	25	20304 - GROUND LUG
2	104389 - ELECTRONIC TIMER	14	22221 - DRAIN VALVE	26	109240 - 6 POLE TERMINAL BLOCK
3	106909 - 2 AMP, 250V FUSE	15	22218 - WATER SOLENOIDS	27	109374 - FUSEBLOCK
4	19993 - POWER SWITCH	16	103731 - HI LIMIT SWITCH	28	109380 - FUSE, 3.5 A (FOR 208 V & 240 V UNITS)
5	104224 - TIMED / MANUAL SWITCH	17	20535 - TRANSFORMER	29	109381 - FUSE, 1.5 A (FOR 480 V UNITS)
6	20478 - 3 MIN TIMER	18	103905 - CONTACTORS	30	19972 - COMPARTMENT THERMAL SWITCH
7	19994 - DESCALC INDICATOR & RESET SWITCH	19	108331 - RESET CIRCUIT BREAKER	31	101540 - END SEGMENT
8	106911 - DESCALC TIMER	20	105966 - RELAY	32	105789 - THERMAL SWITCH (HSB)
9	108880 - DOOR SW (SCS) MAG	21	106541 - INTERMITTENT BLOWDOWN TIMER	33	101541 - TERMINAL BLOCK SECTIONAL
10	107239 - PROBE	22	19972 - COMPARTMENT THERMAL SWITCH	34	
11	107241 - WATER BOARD	23	101540 - END SEGMENT		
12	105789 - THERMAL SWITCH (HSB)	24	101541 - TERMINAL BLOCK SECTIONAL		

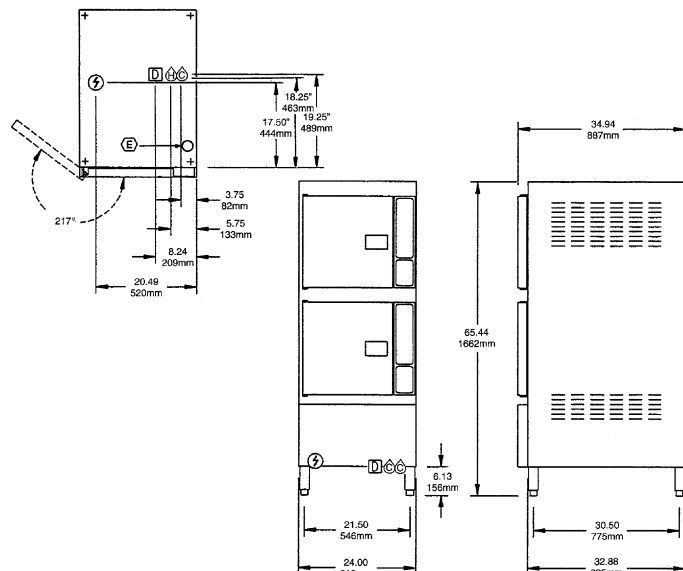
INTERMITTENT BLOWDOWN OPTION



NOTE:
HEAVY WIRE LINES INDICATE
12 AWG HI - TEMP WIRE

SteamCraft® Ultra 10

TWO COMPARTMENT FLOOR MODEL DESIGN
PRESSURELESS CONVECTION STEAMER
Twin Electric Steam Generators, 16 KW each



UTILITY CONNECTIONS

- | | |
|--|---|
| (A) Electrical Supply | (D) Drain: 1.50" (38mm) Dia. |
| (B) Cold Water Supply for Condenser 3/8" Dia. IPS | (E) Inlet for Generator Deliming Solution |
| (C) Cold Water Supply for Generator and Water Injection. 3/8" Dia. IPS (for water treatment conn.)
Unit comes with a 50 Mesh Water Strainer (installation required) | |

TOTAL CAPACITY (2 Compartments)

10 — 12" x 20" x 2 1/2" Cafeteria Pans or
20 — 12" x 20" x 1" Cafeteria Pans or
6 — 12" x 20" x 4" Cafeteria Pans

ELECTRIC ⚡

STANDARD ELECTRIC

VOLTS	KW	3PH AMPS
208	32	92
220	30	80
240	36	88
440	30	40
480	36	44

LOW WATTAGE OPTION

VOLTS	KW	3PH AMPS
208	16.5	46
220	15	40
240	18	44
440	15	20
480	18	22

COLD WATER 💧

35 psi minimum
60 psi maximum
💧 3/8" Dia. IPS for Generator (for water treatment connection)
💧 3/8" Dia. IPS for Condenser

DRAINAGE [D]

1 1/2" Dia.
Do not connect other units to this drain.
Drain line must be vented.
No PVC pipe for drain.

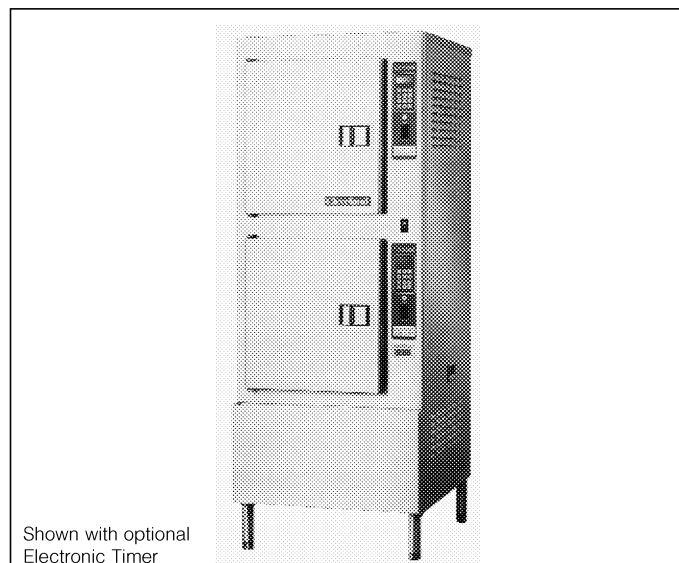
CLEARANCE

Right - 6.00"
Left - 3.00"
Rear - 3.00"

MODEL: ☐ 24-CEA-10

ITEM NUMBER _____

JOB NAME / NUMBER _____



SHORT FORM SPECIFICATION

Shall be Two Compartments, Cleveland Convection Steamer series **SteamCraft® Ultra 10**, Model 24-CEA-10, Twin Electric Atmospheric Steam Generator, 32 KW input. Remote Probe Type Water Level Controls. Steam Generator with Automatic Water Fill on start up. Automatic Generator Blowdown, Two each 16.5 KW Fire Bar Heating Elements. Choice of Compartment Controls, Manual By Pass Operation Mode, Compensating Thermostat, Patented Cold Water Condenser design, Type 430 Stainless Steel exterior and cooking compartments.

WATER QUALITY REQUIREMENT

The quality of water varies greatly from region to region. *Steam equipment must be blown down daily and chemically descaled periodically to ensure proper operation.* To minimize service problems caused by the accumulation of minerals and chemicals in water, review the following quality guidelines with a local water treatment specialist. Inlet water that is beyond these specified guidelines should be treated to achieve the acceptable limits.

TOTAL DISSOLVED SOLIDS	less than 60 parts per million
TOTAL ALKALINITY	less than 20 parts per million
SILICA	less than 13 parts per million
pH FACTOR	greater than 7.5
CHLORINE	less than 30 parts per million

A typical water quality analysis can be secured from your local water district. Water that is potable does not guarantee compatibility with steam equipment. Try **SteamerGard** for factory authorized water.

Cleveland Range reserves right of design improvement or modification, as warranted.

Cleveland Range, LLC
Ph: 1-216-481-4900 Fx: 1-216-481-3782

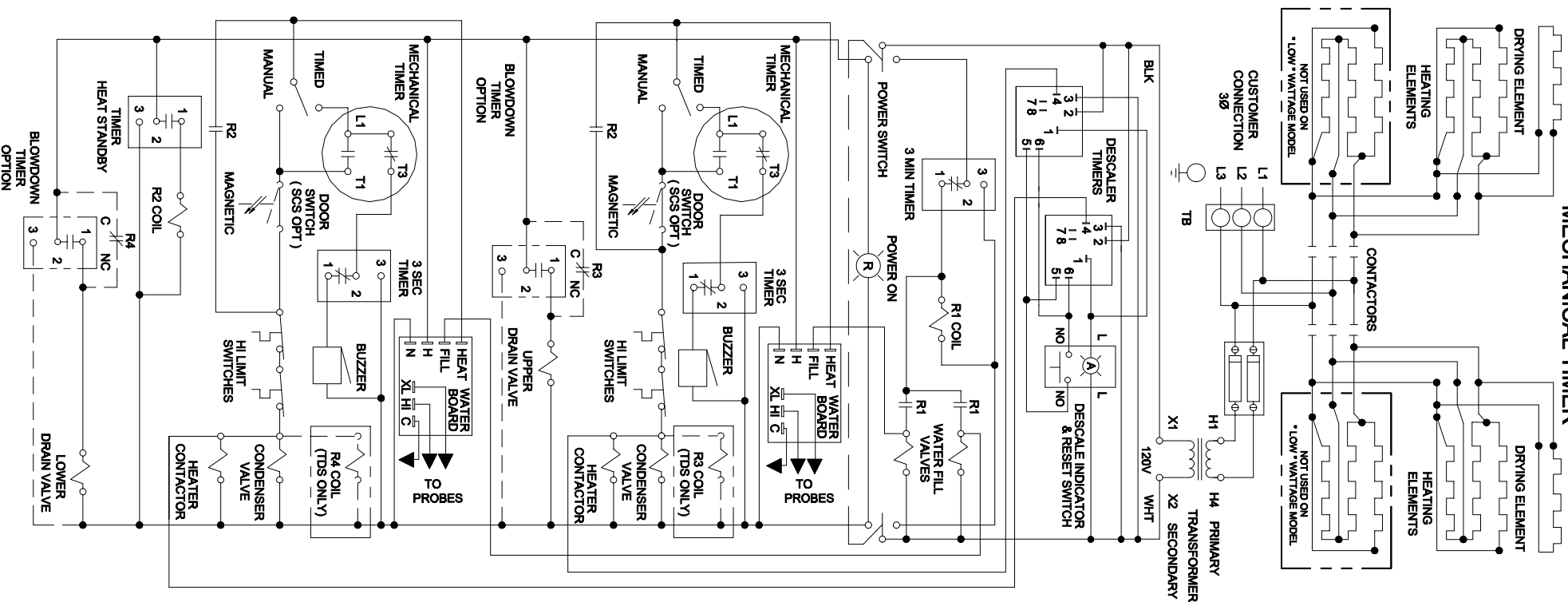
1333 East 179th St., Cleveland, Ohio, U.S.A. 44110
Visit our Web Site at www.clevelandrange.com

CLEVELAND RANGE 24CEA10
SEQUENCE OF OPERATIONS
Mechanical Timer

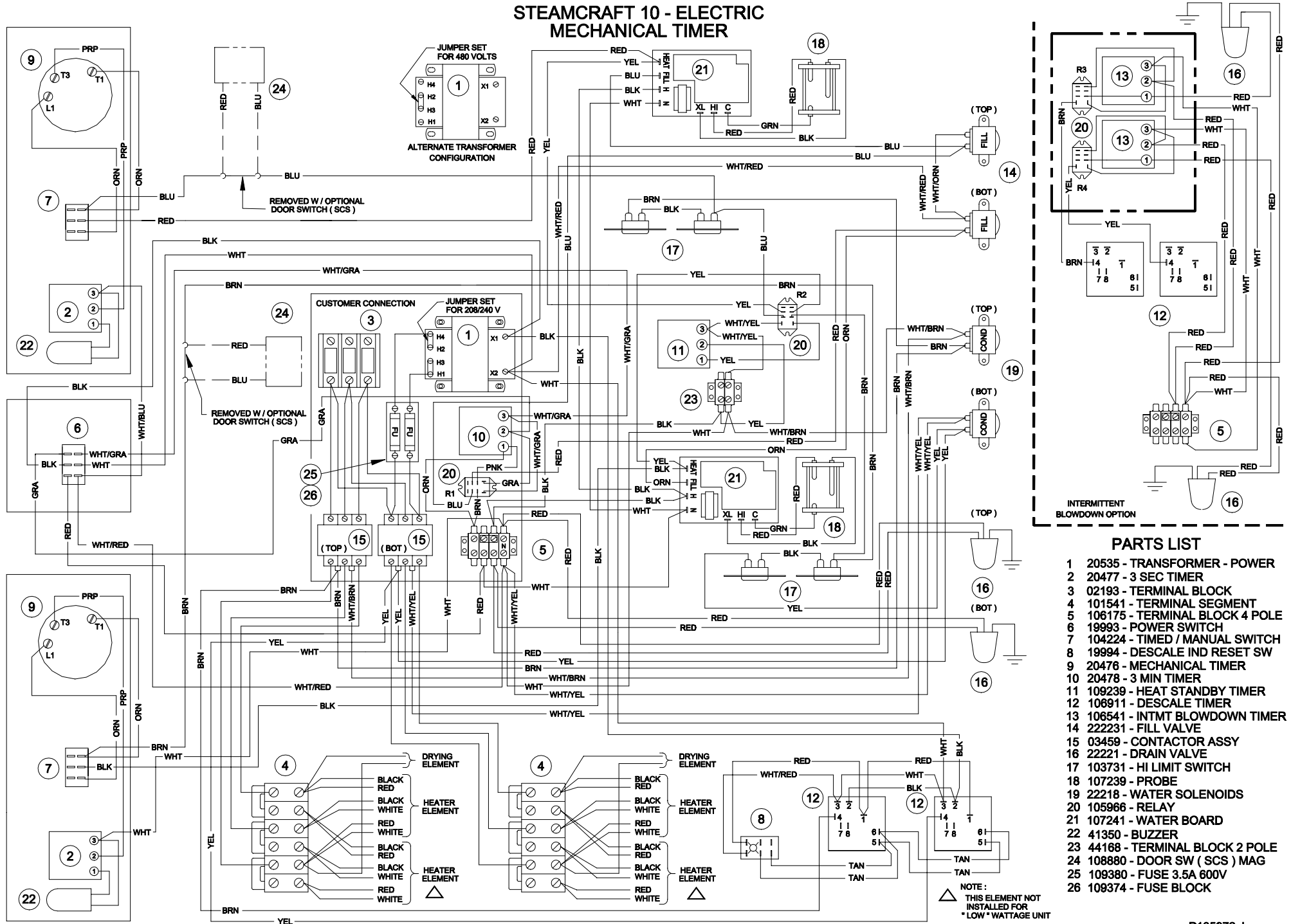
1. Supply power is sent to the primary of the main transformer.
 - 115 VAC is sent from the secondary of the main transformer to the on/off rocker,
2. To turn the unit on, depress the red on/off rocker switch.
 - 115 VAC is sent to the red indicator light.
 - 115 VAC is sent to the normally open drain valves closing them.
 - 115 VAC is sent to the H and N terminals of both water level boards.
3. With the water level board energized and no water in the generators
 - After a 5 second delay, 115 VAC is sent from the FILL terminals to the fill solenoids.
 - The fill solenoids open and the generators fill through the drain valves until the high probe is grounded (see step 4).
 - The water fills to the low probe in each probe assembly shorting it to ground
 - 115 VAC is sent from the HEAT terminals of the water level board to the timed manual switches.
 - 115 VAC is sent to the heat standby timer which will energize the R2 relay coil 3 seconds every 4 minutes
 - The normally open contacts of the R2 relay close bypassing the timed/manual switch to maintain heat while unit is idle
4. For each compartment, when the timed/manual switch is in the manual position or timed position with time on the timer
 - 115 VAC is sent from the timer through the door switch to the normally closed contacts of the high limits
 - 115 VAC is then sent through the high limits to the coil of condensate solenoid and the coil of the contactor.
 - 115 VAC is sent to the clean light timer.
 - When the clean light timer times down 115 VAC is sent to the clean light switch.
 - When the clean light switch is depressed the timer is reset.
 - When the contactor is energized supply voltage is sent to both of the elements.
 - When the mechanical timer times out 115 VAC is sent to the 3-second timer and then to the buzzer for 3 seconds.
5. When the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off.
6. After the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
7. The red 115 VAC switch is depressed and the unit is turned off.

- 115 VAC is removed from the timer and heat circuits.
- 115 VAC is removed from the normally open drain valves allowing the steamer to drain.
- 115 VAC is sent to the 3-minute timer and the R1 relay coil is energized.
- The normally open contacts of the R1 relay will close
- The fill solenoids are then energized for 3 minutes flushing the drains.

STEAMCRAFT-10 ELECTRIC MECHANICAL TIMER



STEAMCRAFT 10 - ELECTRIC MECHANICAL TIMER



PARTS LIST

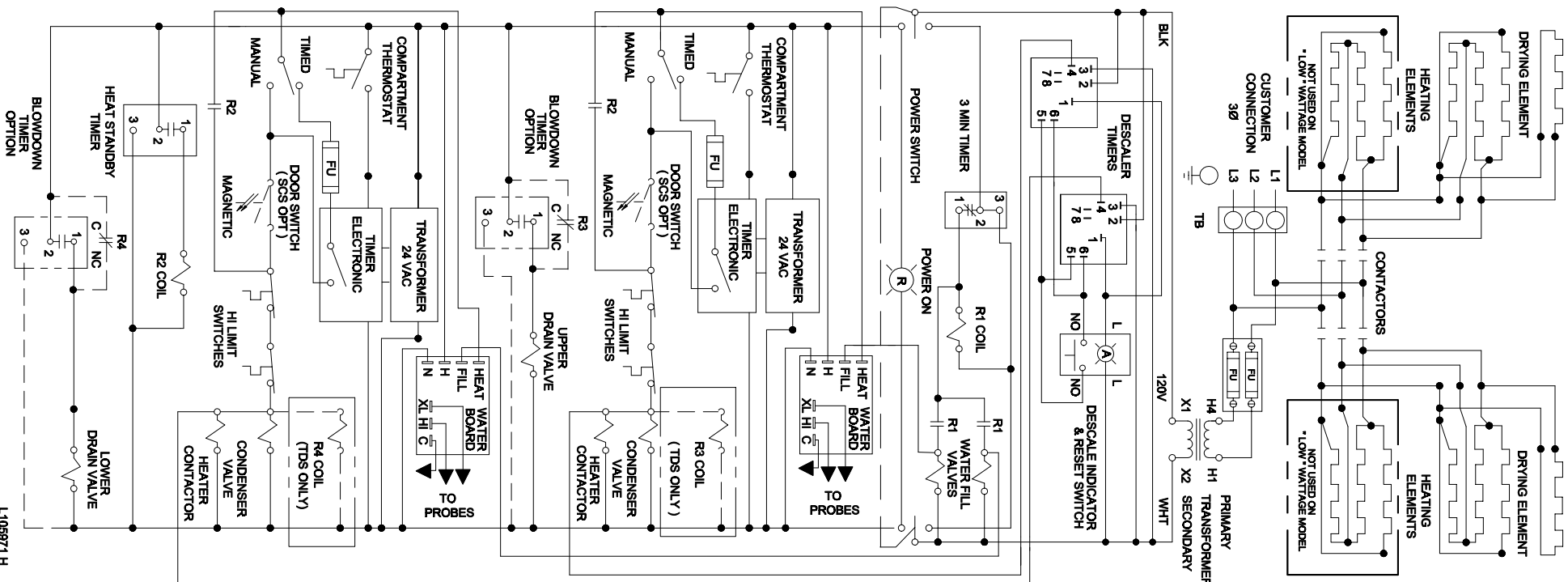
- 1 20535 - TRANSFORMER - POWER
- 2 20477 - 3 SEC TIMER
- 3 02193 - TERMINAL BLOCK
- 4 101541 - TERMINAL SEGMENT
- 5 106175 - TERMINAL BLOCK 4 POLE
- 6 19993 - POWER SWITCH
- 7 104224 - TIMED / MANUAL SWITCH
- 8 19994 - DESCALE IND RESET SW
- 9 20476 - MECHANICAL TIMER
- 10 20478 - 3 MIN TIMER
- 11 109239 - HEAT STANDBY TIMER
- 12 106911 - DESCALE TIMER
- 13 106541 - INTMT BLOWDOWN TIMER
- 14 222231 - FILL VALVE
- 15 03459 - CONTACTOR ASSY
- 16 22221 - DRAIN VALVE
- 17 103731 - HI LIMIT SWITCH
- 18 107239 - PROBE
- 19 22218 - WATER SOLENOIDS
- 20 105966 - RELAY
- 21 107241 - WATER BOARD
- 22 41350 - BUZZER
- 23 44168 - TERMINAL BLOCK 2 POLE
- 24 108880 - DOOR SW (SCS) MAG
- 25 109380 - FUSE 3.5A 600V
- 26 109374 - FUSE BLOCK

CLEVELAND RANGE 24CEA10
SEQUENCE OF OPERATIONS
Electronic Timer

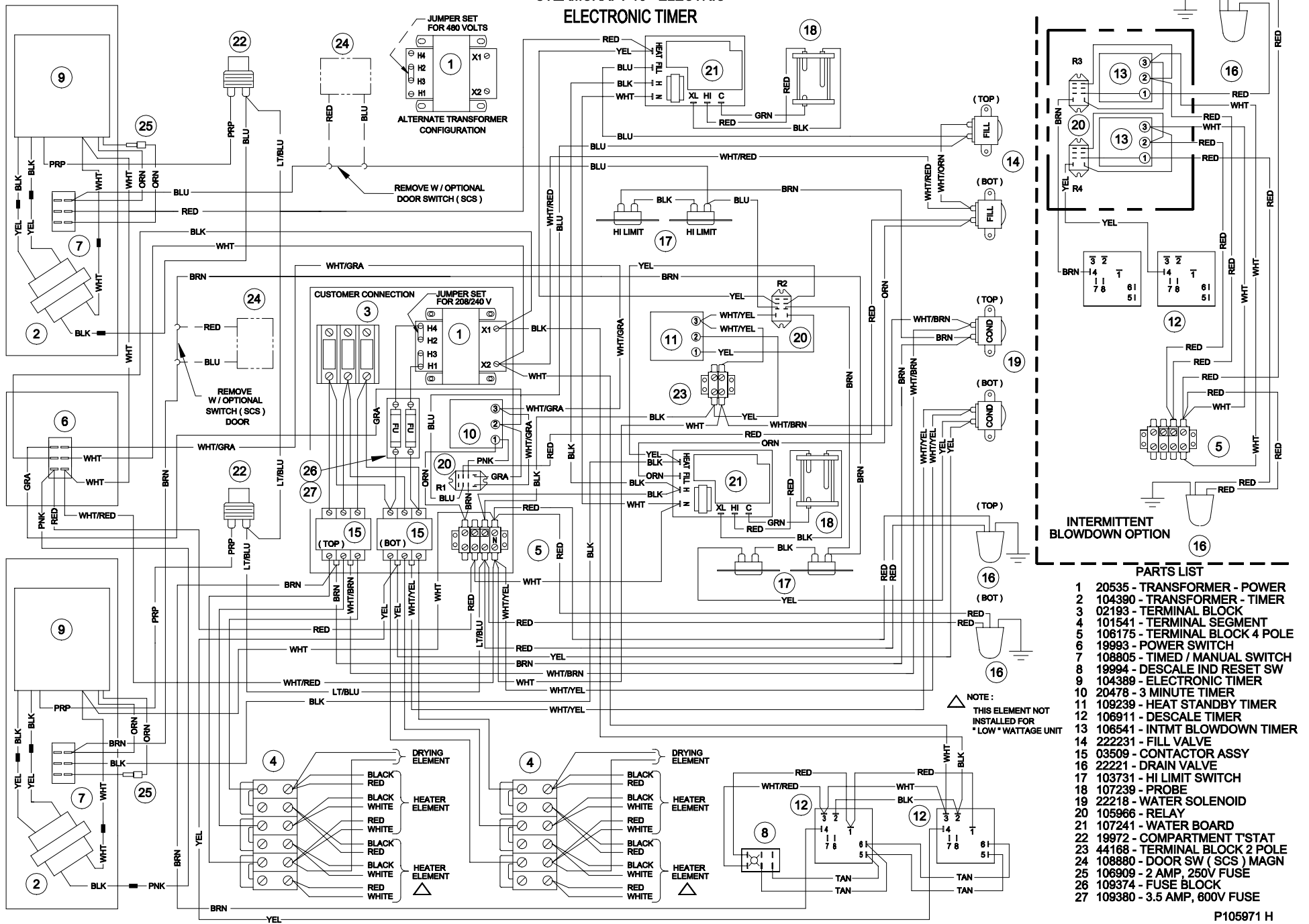
1. Supply power is sent to the primary of the main transformer.
 - 115 VAC is sent from the secondary of the main transformer to the on/off rocker,
2. To turn the unit on, depress the red on/off rocker switch.
 - 115 VAC is sent to the red indicator light.
 - 115 VAC is sent to normally open drain valves closing them.
 - 115 VAC is sent to the H and N terminals of both water level boards
 - 115 VAC is sent to both 24VAC transformers for the electronic timers.
 - "PAUS" and the set time are displayed on the timer.
 - 115 VAC is sent to the normally open compartment thermostat switches.
3. With the water level board energized and no water in the generator
 - After a 5 second delay 115 VAC is sent from the FILL terminals on the water boards to the fill solenoids.
 - The fill solenoids open and the generators fill through the drain valves until the high probe is grounded (see step 4).
 - The water fills to the low probe of each probe assembly shorting it to ground
 - 115 VAC is sent from the HEAT terminals of the water boards to the timed manual switches.
 - 115 VAC is sent to the heat standby timer, which will energize the R2 relay 3 seconds every 4 minutes.
 - The normally open contacts of the R2 relay will close to maintain heat while unit is idle
4. For each compartment, when the timed/manual switch is in the timed position and time is on the timer
 - 115 VAC is sent from the timer through the door switch to the normally closed contacts of the high limits
 - 115 VAC is then sent through the high limits to the coil of condensate solenoid and the coil of the contactor.
 - 115 VAC is sent to the clean light timer.
 - When the clean light timer times down 115 VAC is sent to the clean light switch.
 - When the clean light switch is depressed the timer is reset.
 - When the contactor is energized supply voltage is sent to both of the elements.
 - Steam is energized and sent to the cooking compartment.
 - When the cooking compartment reaches 193 degrees the compartment thermostat closes sending 115 VAC to the timer.
 - The timer will stop flashing "PAUS" then begin counting down.
 - When the timer times down a buzzer will sound and the timer will open removing 115 VAC from the heat circuit.

5. When the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off.
6. After the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
7. The red 115 VAC switch is depressed and the unit is turned off.
 - 115 VAC is removed from the timer and heat circuit.
 - 115 VAC is removed from the normally open drain valves allowing the steamer to drain.
 - 115 VAC is sent to the 3-minute timer and the coil of the R1 relay is energized for 3 minutes.
 - The normally open contacts of the R1 relay close
 - The fill solenoids are energized for 3 minutes flushing the drain.

STEAMCRAFT-10 ELECTRIC ELECTRONIC TIMER



STEAMCRAFT 10 - ELECTRIC ELECTRONIC TIMER

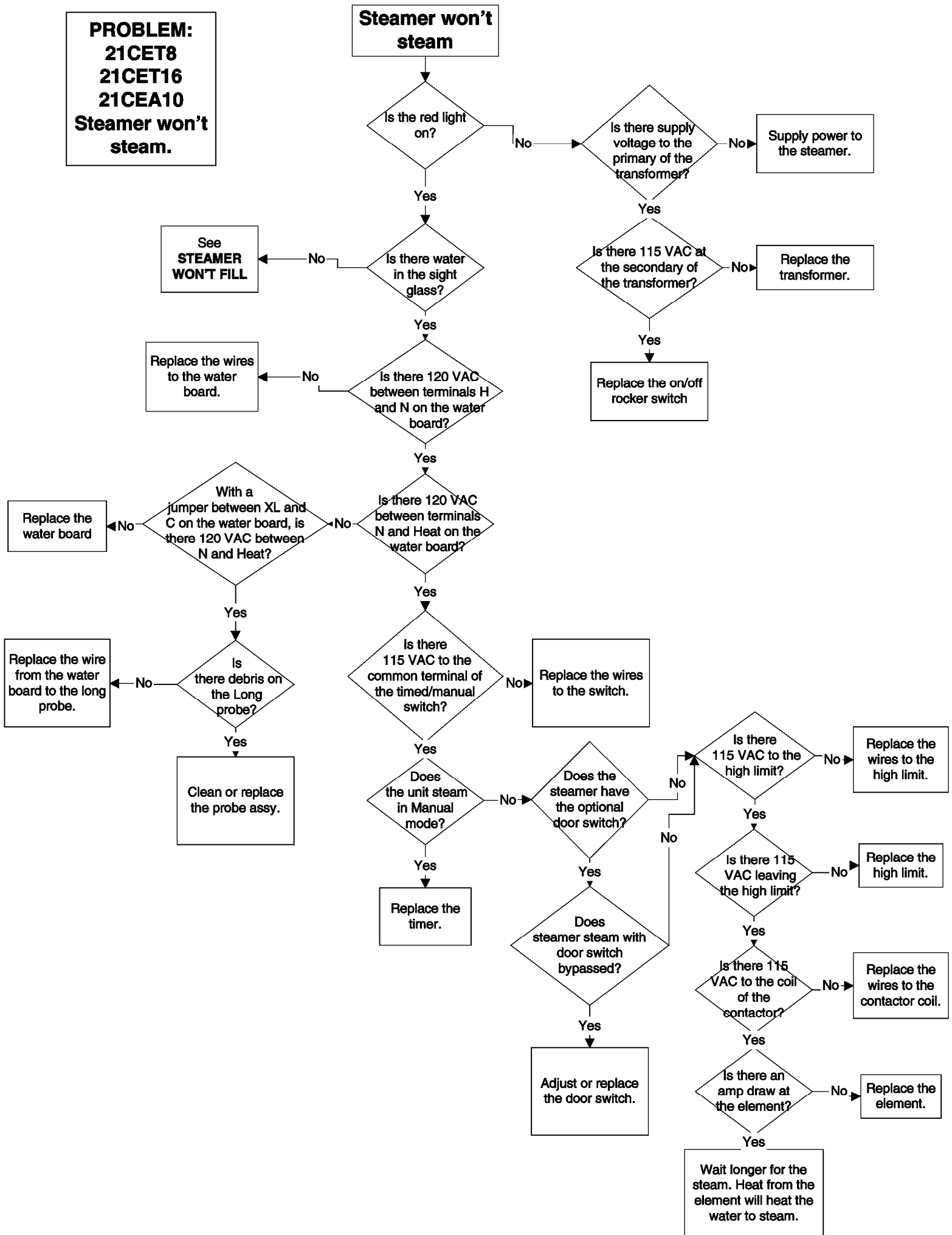


INTERMITTENT BLOWDOWN OPTION

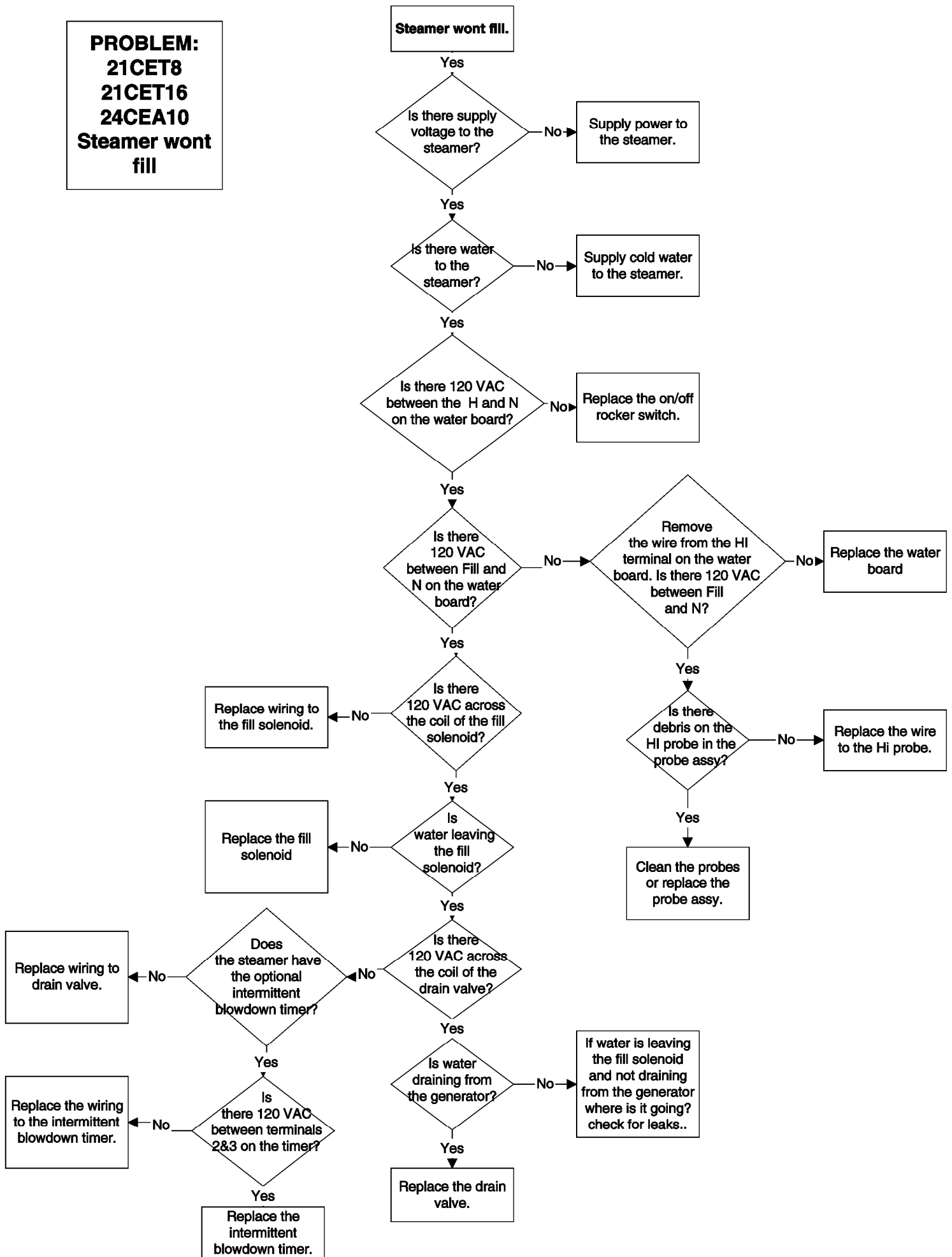
PARTS LIST

- 1 20535 - TRANSFORMER - POWER
- 2 104390 - TRANSFORMER - TIMER
- 3 02193 - TERMINAL BLOCK
- 4 101541 - TERMINAL SEGMENT
- 5 106175 - TERMINAL BLOCK 2 POLE
- 6 19993 - POWER SWITCH
- 7 108805 - TIMED / MANUAL SWITCH
- 8 19994 - DESCALE IND RESET SW
- 9 104389 - ELECTRONIC TIMER
- 10 20478 - 3 MINUTE TIMER
- 11 109239 - HEAT STANDBY TIMER
- 12 106911 - DESCALE TIMER
- 13 106541 - INTMT BLOWDOWN TIMER
- 14 222231 - FILL VALVE
- 15 03509 - CONTACTOR ASSY
- 16 22221 - DRAIN VALVE
- 17 103731 - HI LIMIT SWITCH
- 18 107239 - PROBE
- 19 22218 - WATER SOLENOID
- 20 105966 - RELAY
- 21 107241 - WATER BOARD
- 22 19972 - COMPARTMENT T'STAT
- 23 44168 - TERMINAL BLOCK 2 POLE
- 24 108880 - DOOR SW (SCS) MAGN
- 25 106909 - 2 AMP, 250V FUSE
- 26 109374 - FUSE BLOCK
- 27 109380 - 3.5 AMP, 600V FUSE

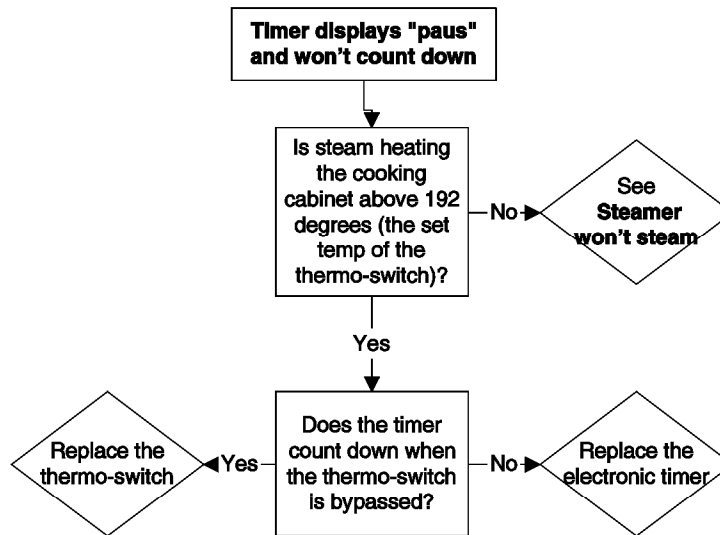
PROBLEM:
21CET8
21CET16
21CEA10
Steamer won't steam.



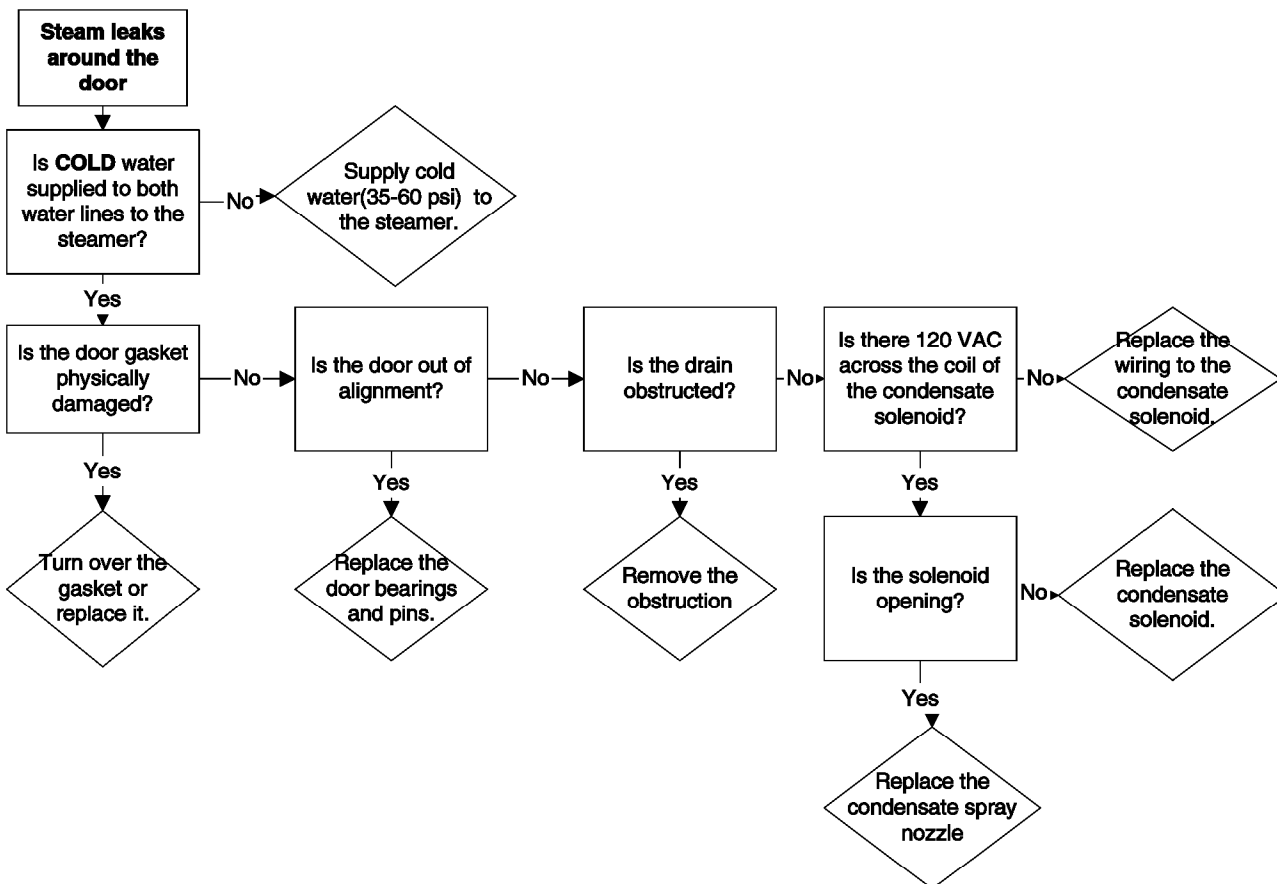
PROBLEM:
21CET8
21CET16
24CEA10
Steamer wont fill



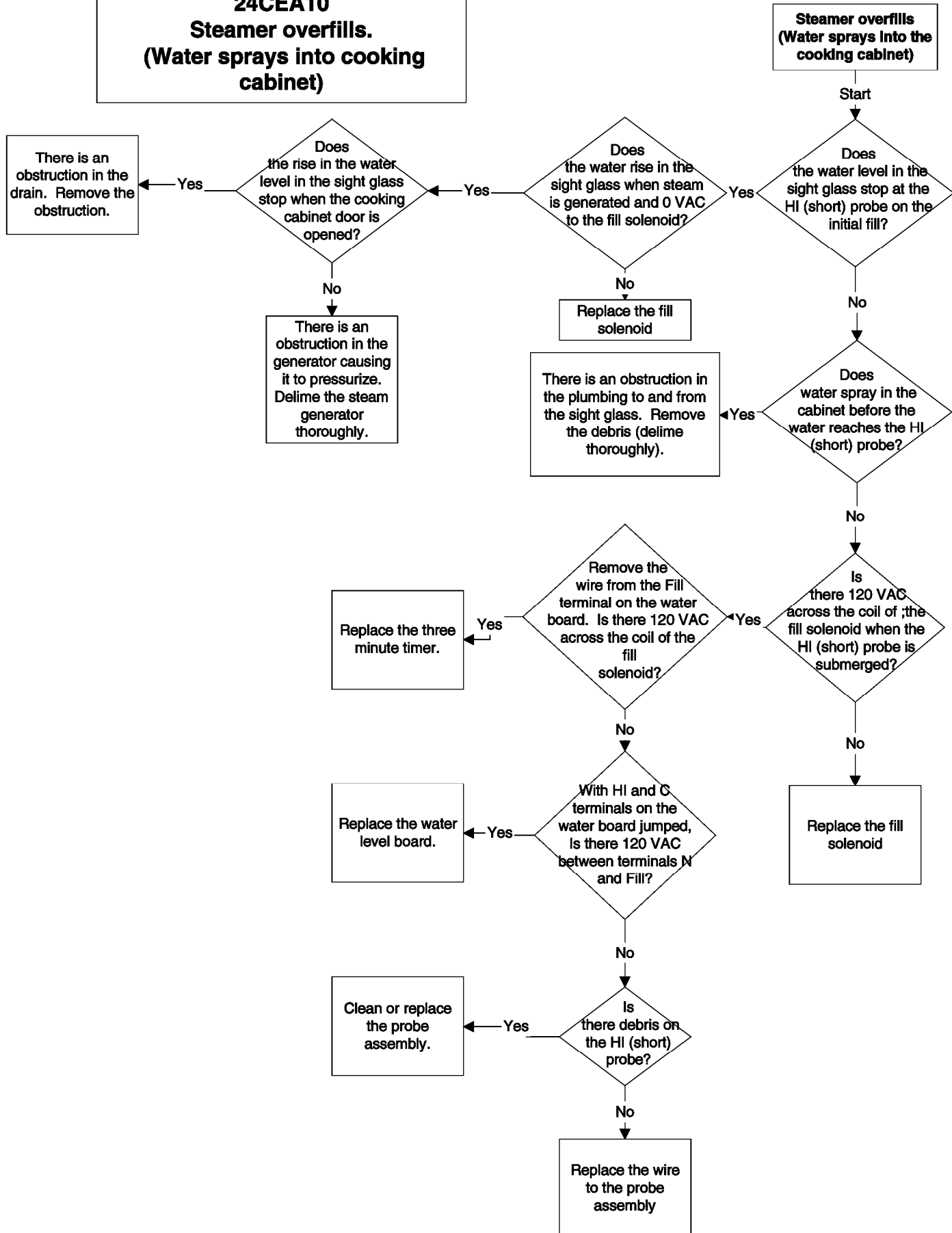
PROBLEM:
21CET8, 21CET16, 24CEA10
Electronic timer displays "PAUS" and won't count down



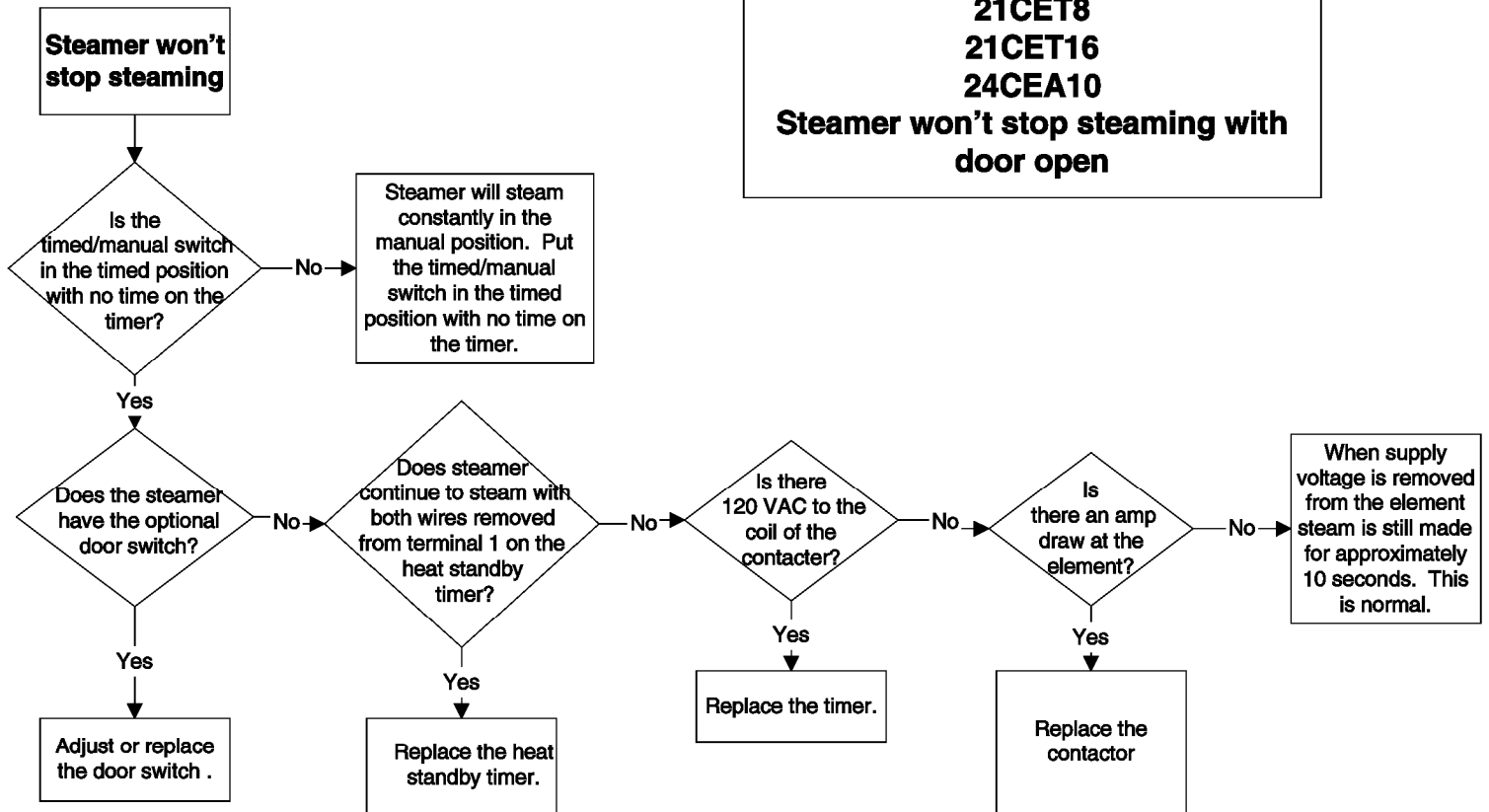
PROBLEM:
21CET8, 21CET16, 24CEA10
Steam leaks around the door.



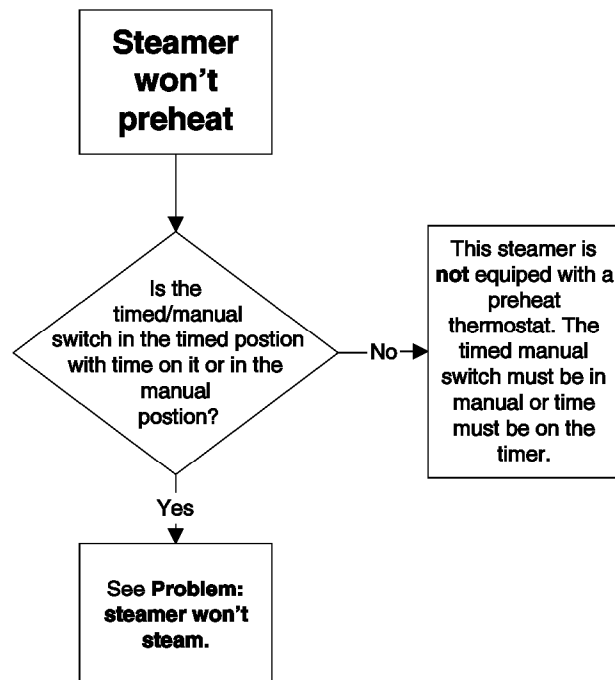
PROBLEM:
21CET8
21CET16
24CEA10
Steamer overfills.
(Water sprays into cooking cabinet)



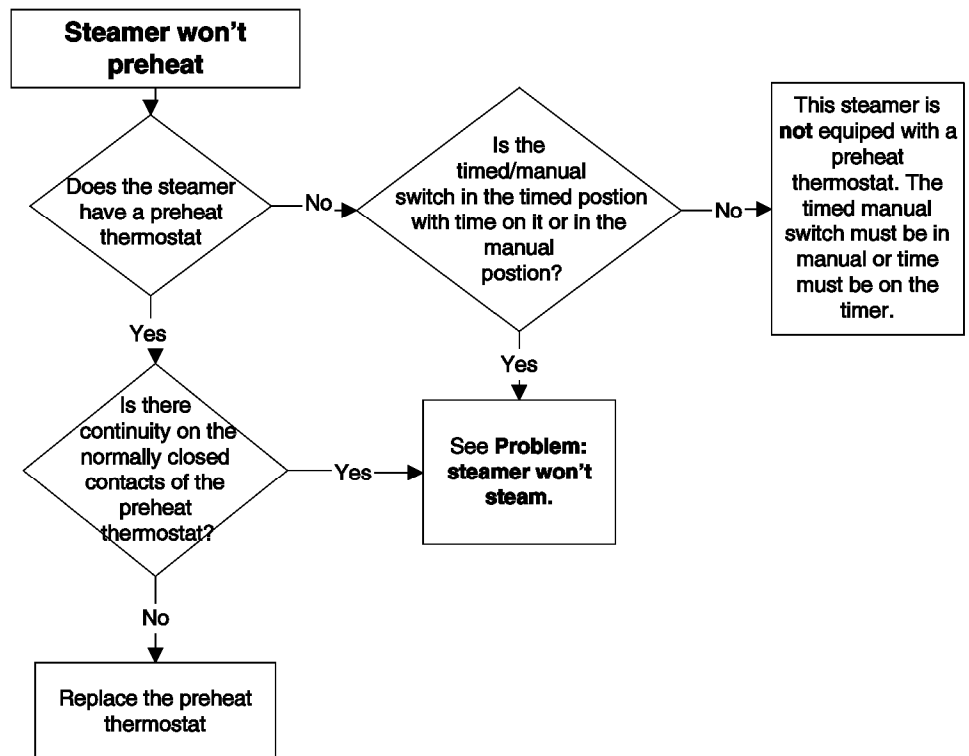
PROBLEM:
21CET8
21CET16
24CEA10
Steamer won't stop steaming with door open



Problem:
21CET8, 24CEA10
Steamer won't preheat



Problem:
21CET16
Steamer won't preheat



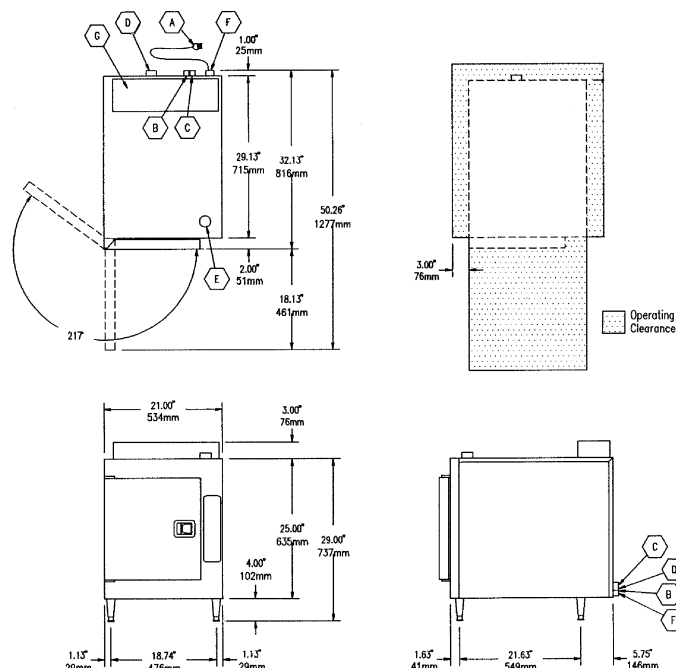
SteamCraft® Ultra 5

COUNTER TYPE PRESSURELESS
CONVECTION STEAMER
GAS Steam Generator, 75,000 BTU

MODEL: ☐ 21-CGA-5

ITEM NUMBER _____

JOB NAME / NUMBER _____



Shown with optional
Electronic Timer







SHORT FORM SPECIFICATION

Shall be CLEVELAND, SteamCraft® Ultra 5, one compartment, Counter-Type Steamer, Model 21-CGA-5, 75 M BTU, heavy duty all Stainless Steel construction; rear mounted, insulated Steam Generator with Remote Probe Type Water Level Controls and Automatic Steam Generator Blowdown with "Water Jet" Drain Cleaning feature.

WATER QUALITY REQUIREMENTS

The quality of water varies greatly from region to region. Steam equipment generators must be drained daily and chemically descaled periodically to ensure proper operation. To minimize service problems caused by the accumulation of minerals and chemicals in water review the following quality guidelines with a local water treatment specialist. Inlet water that is beyond these specified guidelines should be treated to achieve these acceptable limits. Total Dissolved Solids less than 60 ppm, Alkalinity less than 20 ppm, Silica less than 13 ppm, pH factor greater than 7.5, Chlorine less than 30 ppm.

TOTAL CAPACITY	
5 — 12" x 20" x 2 1/2" Cafeteria Pans or	
10 — 12" x 20" x 1" Cafeteria Pans or	
3 — 12" x 20" x 4" Cafeteria Pans	
UTILITY CONNECTIONS	
(A) Electrical Supply	(E) Inlet for Generator Deliming Solution
(B) Cold Water Supply for Condenser 1/4" Dia. IPS	(F) Gas Supply 1/2" (13mm) Dia. IPS
(C) Cold Water Supply for Generator and Water Injection. 1/4" Dia. IPS (for water treatment conn.) Inlet for Generator Deliming Solution	(G) Flue Gas Exhaust from Boiler
(D) Drain: 1-1/4" (32mm) Dia. IPS	

GAS 	ELECTRIC 	COLD WATER 	DRAINAGE 
1/2" (13mm) Dia. IPS	115V - 1 Phase 35 Watts	35 psi minimum 60 psi maximum  1/4" Dia. IPS for Generator (for water treatment connection)  1/4" Dia. IPS for Condenser	1 1/4" Dia. IPS Do not connect any other units to this drain. Drain line must be vented. No PVC pipe for drain.
SUPPLY PRESSURE			
NATURAL	PROPANE		
4.00" W.C. minimum 14.00" W.C. maximum	12.00" W.C. minimum 14.00" W.C. maximum		
Manufacturer must be notified if unit will be used above 2,000 ft. altitude.			

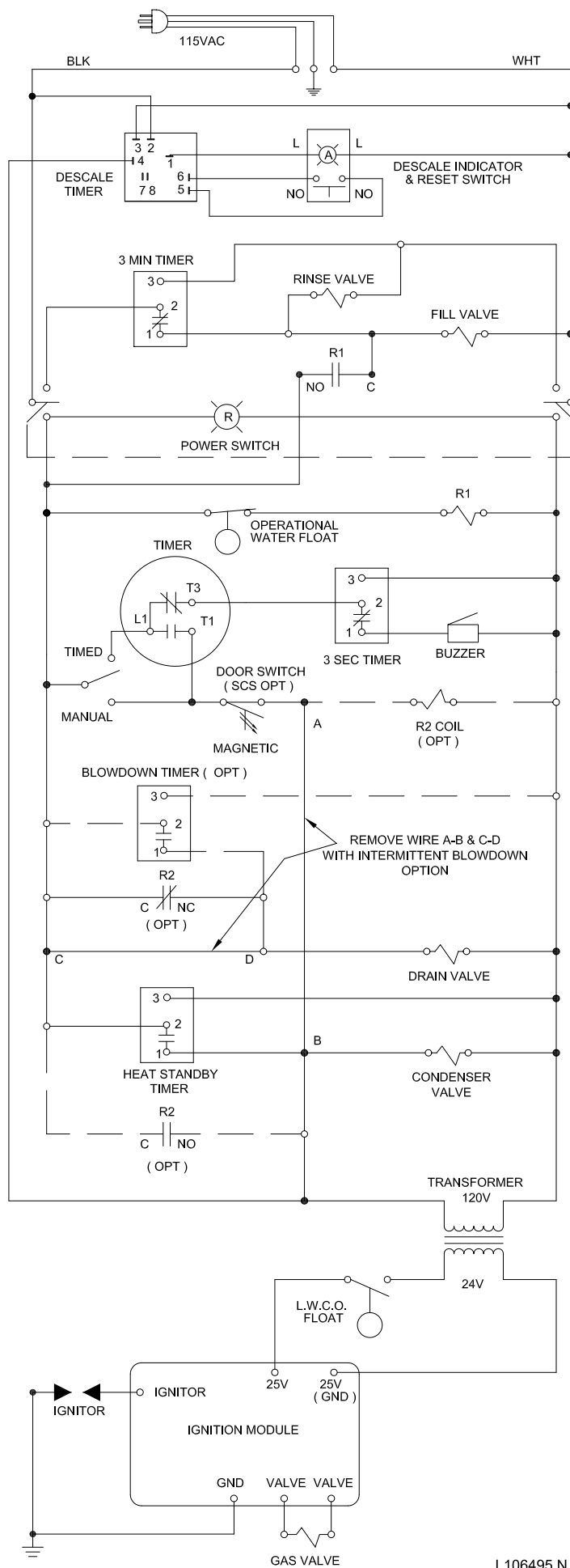
Cleveland Range reserves right of design improvement or modification, as warranted.

**CLEVELAND RANGE 21CGA5
SEQUENCE OF OPERATIONS
STEAMCRAFT ULTRA 5
Mechanical Timer
Floats**

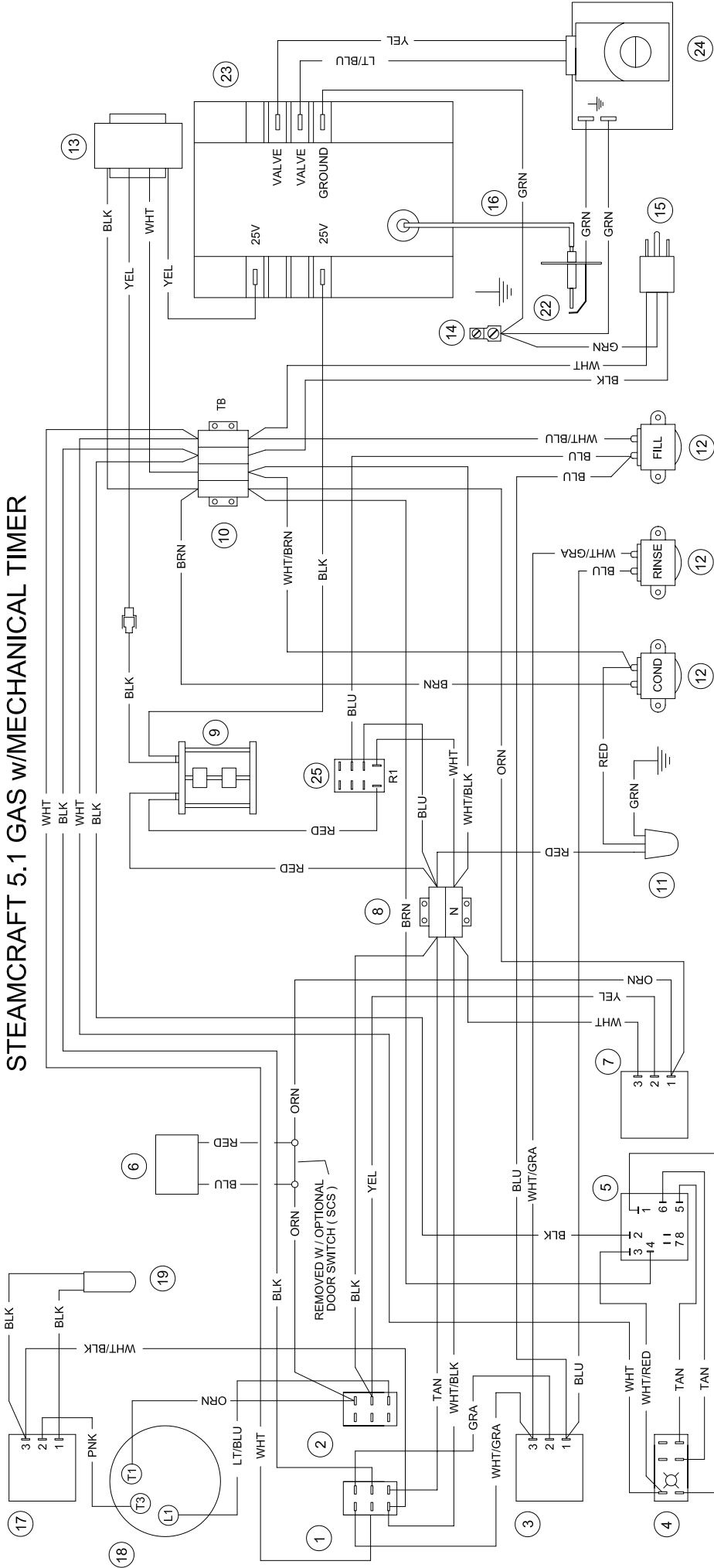
1. To turn the unit on, depress the red on/off rocker switch.
2. 115 VAC is sent to the red indicator light.
3. 115 VAC is sent to the normally open drain valve closing it.
4. 115 VAC is sent through the normally closed water level (top) float switch to the fill solenoid.
5. The fill solenoid opens and the generator fills through the drain valve.
 - The water fills to the normally open low water cut off float switch (bottom float).
 - The float is lifted by the water and the switch closes.
 - The water fills to the normally closed water level (top) float switch.
 - The float is lifted by the water and the switch opens.
 - With the switch opened 115 VAC is removed from the fill solenoid and the unit stops filling.
 - When the water level drops, the operational water float drops closing the switch and energizing the fill solenoid. The unit fills back to the proper level.
6. When the timed/manual switch is in the timed position and time is on the timer
 - 115 VAC is sent from the timer through the optional door switch to the condensate valve and the primary of the 24 VAC ignition transformer.
 - 115 VAC is sent to the #4 terminal on the clean light timer.
 - The clean light timer counts down from the set time (time is set by dip switches on timer)
 - 115 VAC is sent to the amber light in the clean light switch.
 - The light is turned off and the clean light timer is reset by depressing the clean light timer switch.
 - With the sight glass filled the L.W.C.O. float will be raised and the normally open switch is closed.
 - 24 VAC is supplied from the secondary of the transformer through the L.W.C.O. float switch to the ignition module.
 - Spark is sent to the igniter.
 - 24 VAC is sent to the gas valve.
 - The gas valve opens to the first stage (.7" W.C. natural gas and 2.25" LP) allowing gas to the burner.
 - 6 to 8 seconds later the valve opens to the second stage (3.5" W.C. natural gas and 10" W.C. LP)

- When the gas is ignited the ignition module detects at least 1.5 micro-amps DC through the flame and burner ground wire.
 - If the 1.5 micro-amps DC is not detected in 4 seconds the ignition module locks out and has to be reset by removing 24 VAC to the module. This can be done by turning the steamer on and off.
7. With water in the generator and flame heating it steam is made and directed into the cooking chamber.
 8. The steamer will continue to steam until the timer runs down.
 - When the timer times down 115 VAC is removed from the heat circuit.
 - 115 VAC is sent to the 3 second timer
 - 115 VAC sent to the buzzer for three seconds.
 9. The steamer is turned off by depressing the on/off rocker switch.
 - 115 VAC is removed from the heat and timer circuits.
 - 115 VAC is removed from the drain valve.
 - 115 VAC is sent to the 3-minute timer and water is sent in to the now open drain valve flushing and cooling the drain.

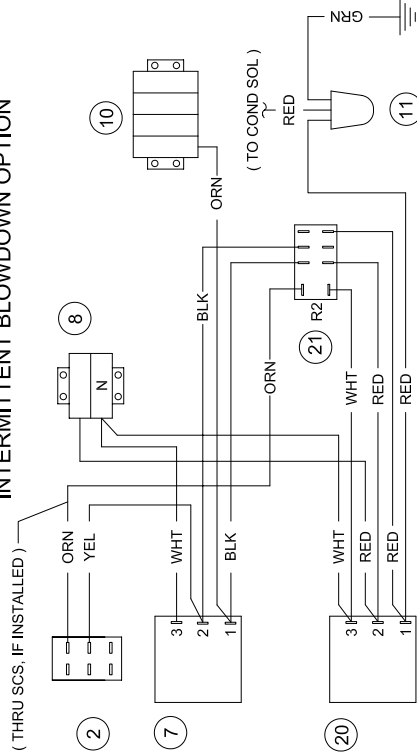
STEAMCRAFT 5.1 GAS, MECHANICAL TIMER



STEAMCRAFT 5.1 GAS w/MECHANICAL TIMER



INTERMITTENT BLOWDOWN OPTION



PARTS LIST

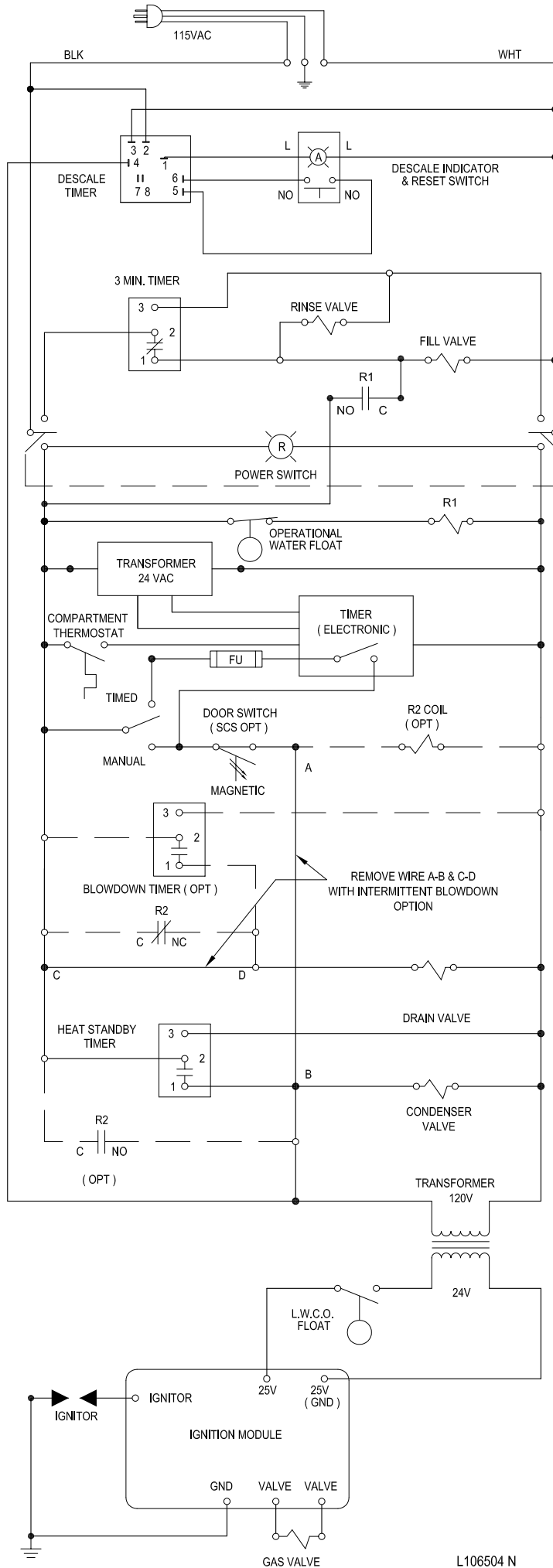
1	19993 - POWER SWITCH	13	20528 - TRANSFORMER 24V	24	106400 - GAS VALVE (NAT)
2	104224 - TIMED/MANUAL SWITCH	14	20304 - GROUND LUG	25	1064001 - GAS VALVE (LP)
3	20478 - 3 MIN TIMER	15	106461 - LINE CORD		105966 - RELAY
4	19994 - DESCALC INDICATOR RESET SW.	16	1065681150 - IGNITION CABLE		
5	106911 - DESCALC TIMER	17	20477 - 3 SEC TIMER		
6	108880 - DOOR SW (SCS) MAGNETIC	18	20476 - MECHANICAL TIMER		
7	106580 - HEAT STANDBY TIMER	19	41350 - BUZZER		
8	44168 - TERMINAL BLOCK	20	106541 - INTMT BLOWDOWN TIMER		
9	103726 - FLOAT ASSEMBLY	21	105966 - RELAY		
10	44164 - TERMINAL BLOCK	22	300092 - IGNITOR		
11	22221 - DRAIN VALVE	23	03546 - IGNITION MODULE		
12	22218 - WATER SOLENOIDS				

CLEVELAND RANGE 21CGA5
SEQUENCE OF OPERATIONS
Electronic Timer
Floats

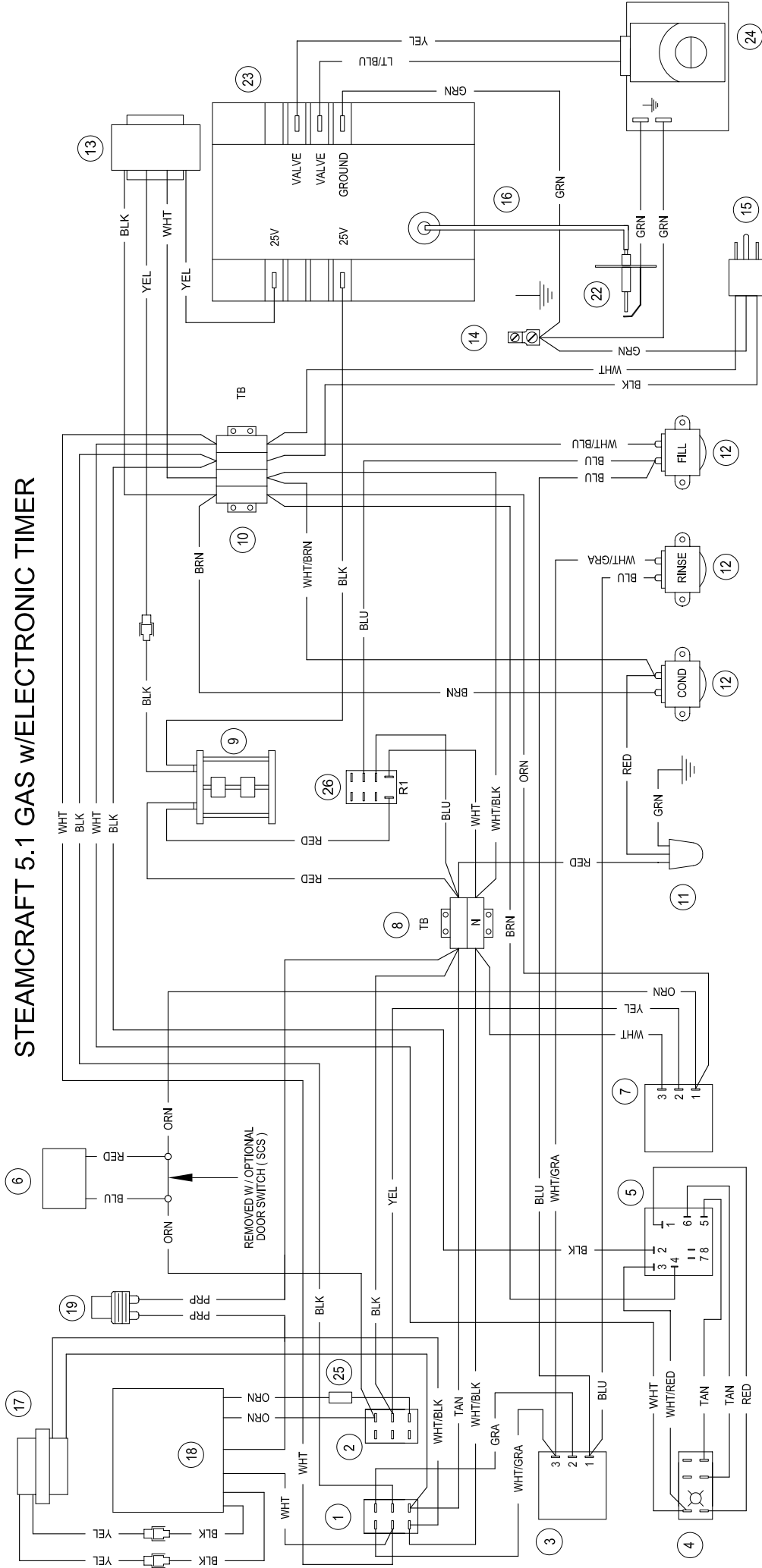
1. To turn the unit on, depress the red on/off rocker switch.
2. 115 VAC is sent to the red indicator light.
3. 115 VAC is sent to the 24 VAC timer transformer.
 - 24 VAC is sent to the timer.
4. 115 VAC is sent to normally open drain valve closing it.
5. 115 VAC is sent through the normally closed operational water float switch (top float, red wires) to the fill solenoid.
6. The fill solenoid opens and the generator fills through the drain valve.
 - The water fills to the normally open low water cut off float switch (bottom float black wires).
 - The water lifts the float and the switch closes.
 - The water fills to the normally closed operational water float switch.
 - The water lifts the float and the switch opens.
 - With the switch opened 115 VAC is removed from the fill solenoid and the unit stops filling.
 - When the water level drops, the operational water float drops closing the switch and energizing the fill solenoid. The unit fills back to the proper level.
7. When the timed/manual switch is in the timed position and time is on the timer
 - The timer display will alternate between "PAUS" and the set time. This will continue until the cooking cabinet reaches 193 degrees and the thermal switch closes. Then the timer will begin timing down.
 - 115 VAC is sent from the timer through the optional door switch to the condensate valve and the primary of the 24 VAC ignition transformer.
 - 115 VAC is sent to the #4 terminal on the clean light timer.
 - The clean light timer counts down from the set time (time is set by dip switches on timer)
 - 115 VAC is sent to the amber light in the clean light switch.
 - The light is turned off and timer reset by depressing the clean light timer switch.
 - With the sight glass filled the L.W.C.O. float will be raised and the normally open switch is closed.
 - 24 VAC is supplied from the secondary of the transformer through the L.W.C.O. float switch to the ignition module.
 - Spark is sent to the igniter.
 - 24 VAC is sent to the gas valve.

- The gas valve opens to the first stage (.7" W.C. natural gas and 2.25" LP) allowing gas to the burner.
 - 6 to 8 seconds later the valve opens to the second stage (3.5" W.C. natural gas and 10" W.C. LP)
 - When the gas is ignited the ignition module detects at least 1.5 micro-amps DC through the flame and burner ground wire.
 - If the 1.5 micro-amps DC is not detected in 4 seconds the ignition module locks out and has to be reset by removing 115 VAC to the module.
8. With water in the generator and flame heating it steam is made and directed into the cooking chamber.
9. The steamer will continue to produce steam until the timer counts down.
- When the timer times down 115 VAC is removed from the heat circuit and condensate circuit.
10. The steamer is turned off by depressing the on/off rocker switch.
- 115 VAC is removed from the heat and timer circuits.
 - 115 VAC is removed from the drain valve.
 - 115 VAC is sent to the 3-minute timer and water is sent in to the now open drain valve flushing and cooling the drain.

STEAMCRAFT 5.1 GAS, ELECTRONIC TIMER



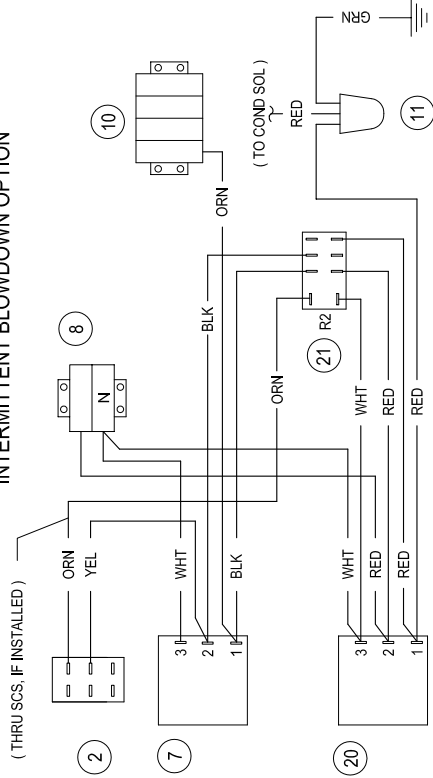
STEAMCRAFT 5.1 GAS w/ELECTRONIC TIMER



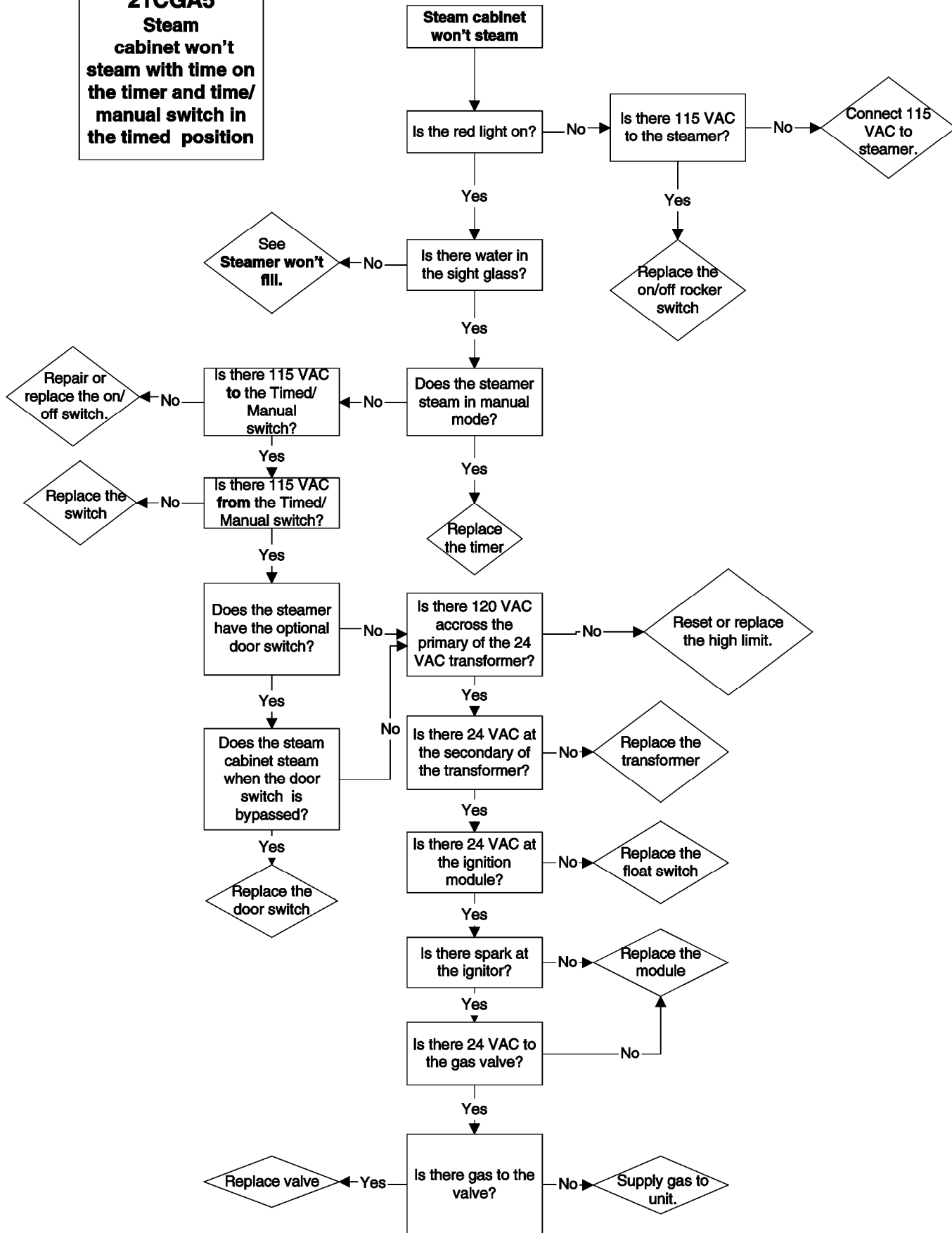
PARTS LIST

- 1 19993 - POWER SWITCH
- 2 104224 - TIMED / MANUAL SWITCH
- 3 20478 - 3 MIN TIMER
- 4 19994 - DESCALC INDICATOR RESET SW
- 5 106911 - DESCALC TIMER
- 6 108880 - DOOR SW (SCS) MAGNETIC
- 7 106580 - HEAT STANDBY TIMER
- 8 44168 - TERMINAL BLOCK
- 9 103726 - FLOAT ASSEMBLY
- 10 44164 - TERMINAL BLOCK
- 11 22221 - DRAIN VALVE
- 12 22218 - WATER SOLENOIDS
- 13 20528 - TRANSFORMER 24V
- 14 20304 - GROUND LUG
- 15 106461 - LINE CORD
- 16 1065881150 - IGNITION CABLE
- 17 104390 - TRANSFORMER
- 18 104389 - ELECTRONIC TIMER
- 19 19972 - THERMAL SWITCH
- 20 106541 - INTMT BLOWDOWN TIMER
- 21 105986 - RELAY
- 22 300092 - IGNITOR
- 23 03546 - IGNITION MODULE
- 24 106400 - GAS VALVE (NAT)
- 25 1064001 - GAS VALVE (LP)
- 26 106909 - 2 AMP, 250V FUSE
- 26 105986 - RELAY

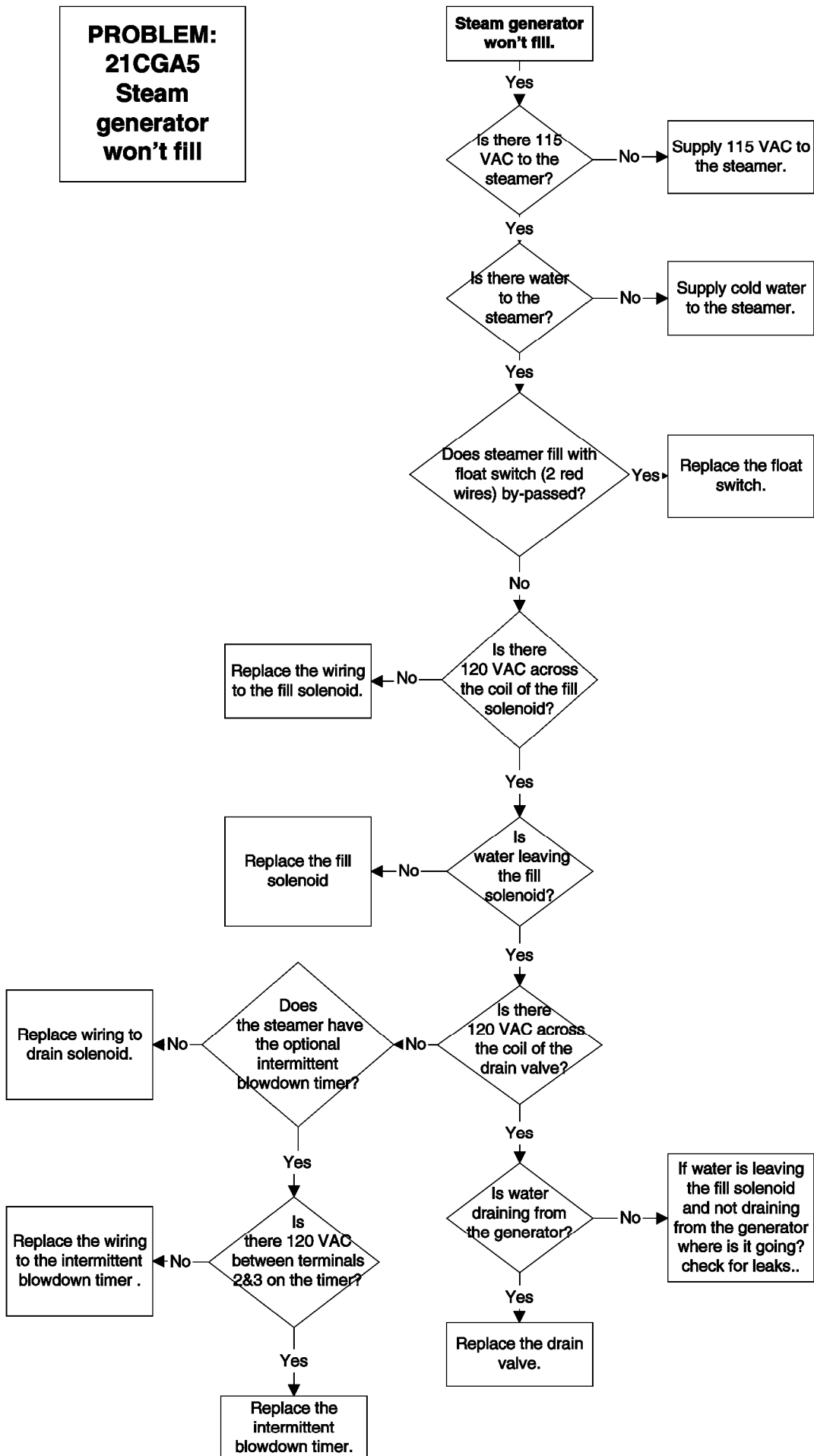
INTERMITTENT BLOWDOWN OPTION



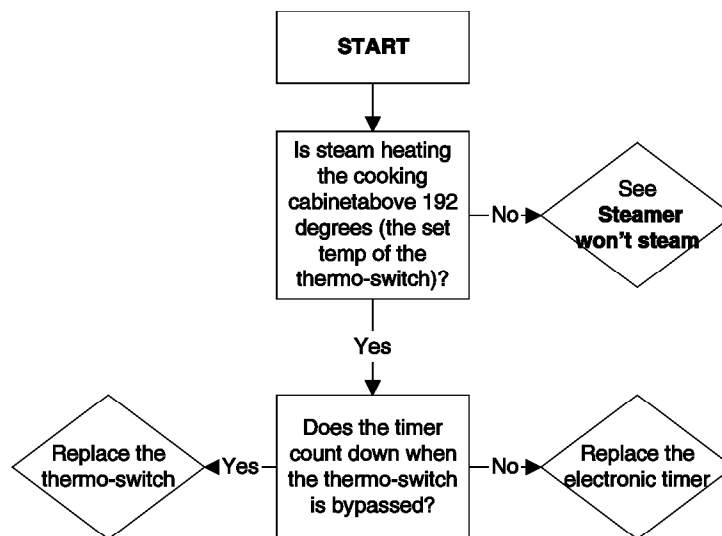
PROBLEM:
21CGA5
Steam
cabinet won't
steam with time on
the timer and time/
manual switch in
the timed position



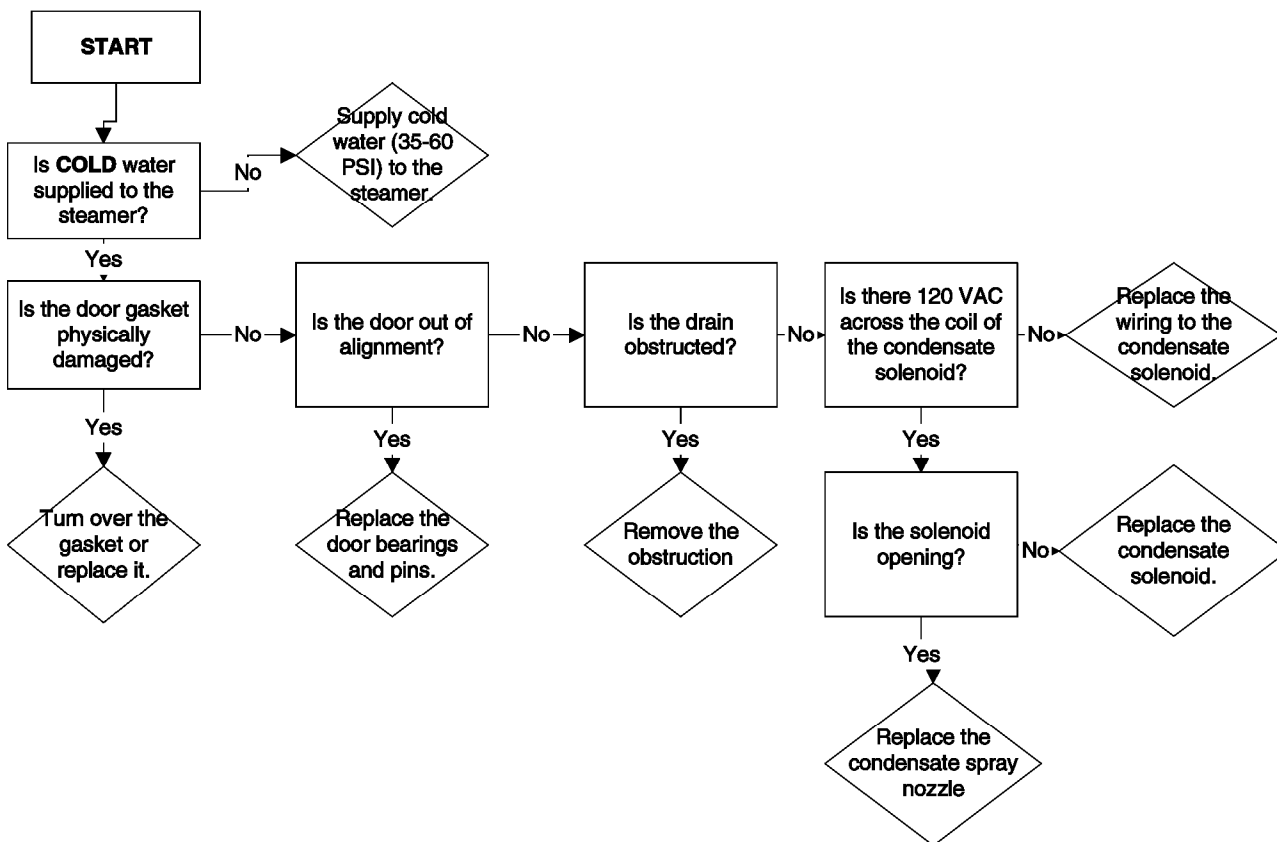
**PROBLEM:
21CGA5
Steam
generator
won't fill**



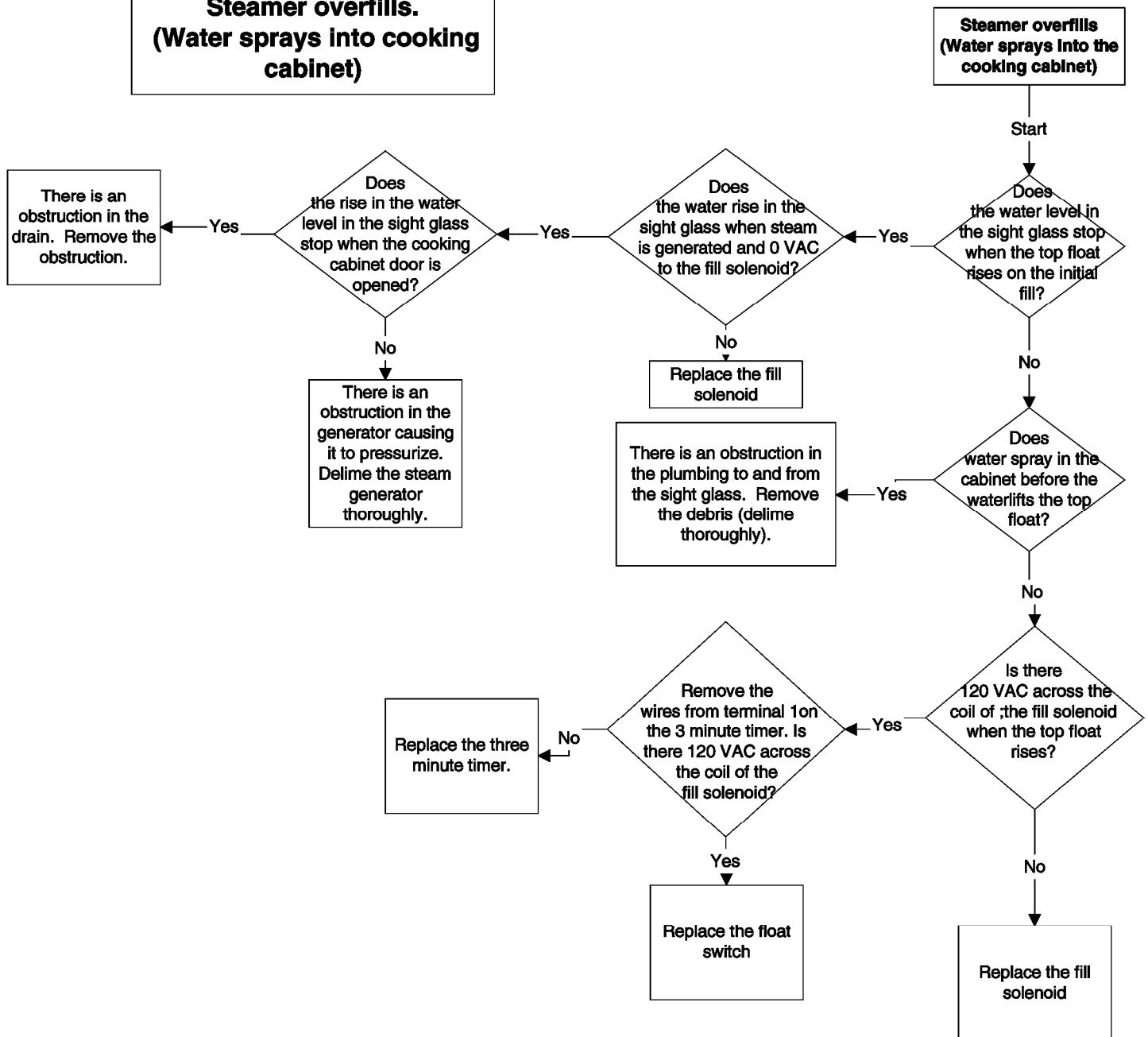
PROBLEM:
21CGA5
Electronic timer displays "PAUS" and won't count down

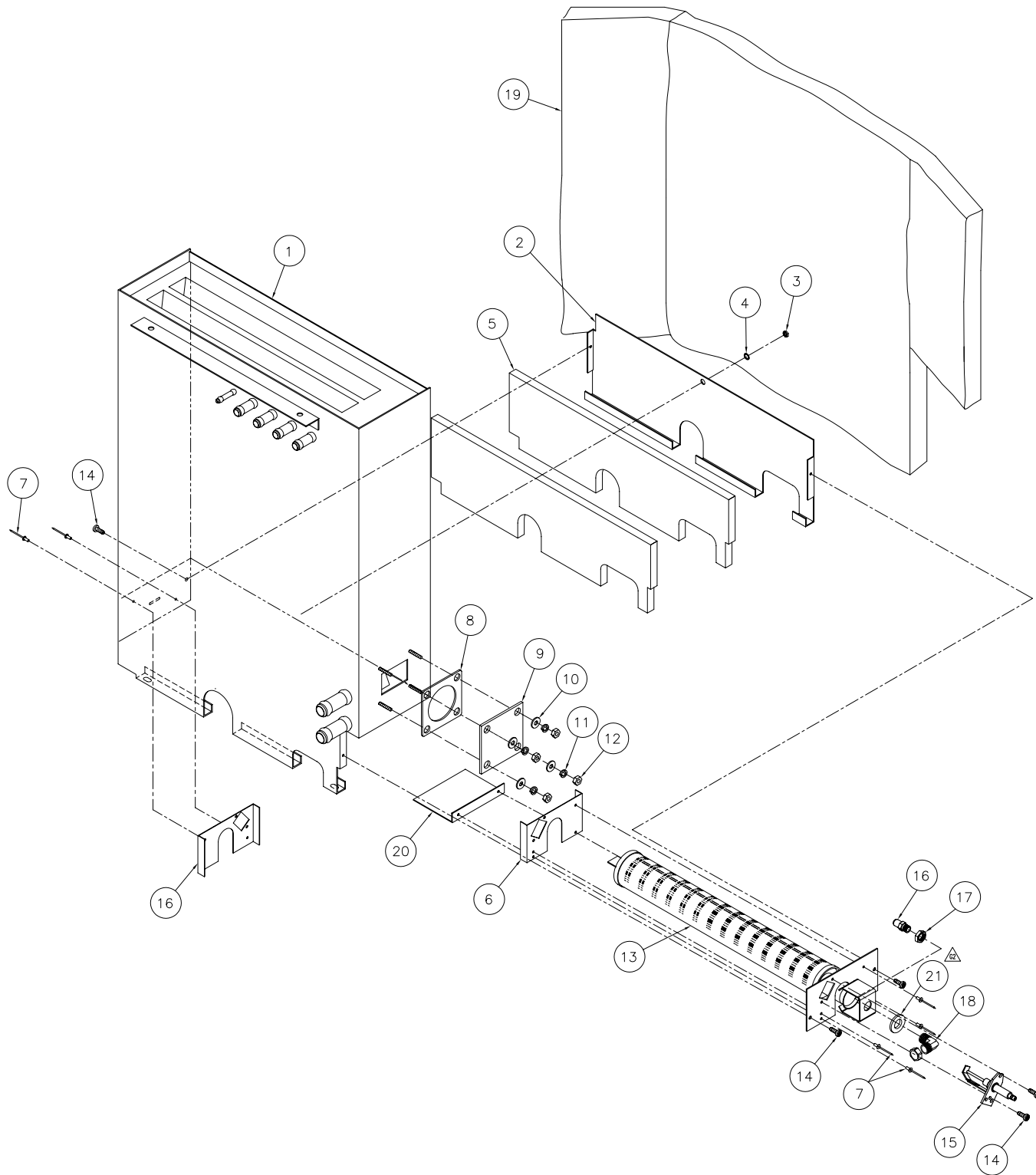


PROBLEM:
21CGA5
Steam leaks around the door.



PROBLEM:
21CGA5
Steamer overfills.
(Water sprays into cooking cabinet)





21	-	100539	WASHER, 0.563 ID
20	1	111146	BAFFLE, BURNER, 21CGA5
19	1	106408	INSULATION, GENERATOR WRAP
18	-	106459	FITTING, COMPRESSION, 1/2 T x 1/4-18 NPT, 90°, MOD
17	-	106460	NUT, 1/4-18 NPT, BRASS
16	-	1064021	ORIFICE, #41 DRILL, LP GAS
16	-	106402	ORIFICE, #21 DRILL, NATURAL GAS
15	-	300092	ELECTRODE, REVERSED, COMBINATION IGNITOR/SENSOR
14	5	106126	SCREW, TORX, 8-32 x 1/2
13	-	106582	BURNER, WELD ASSEMBLY
12	4	14618	NUT, HEX, 1/4-20
11	4	23105	WASHER, LOCK, 1/4, SST
10	4	23116	WASHER, FLAT, 1/4 ID x 5/8 OD
9	1	104614	COVER, BLOCK-OFF
8	1	07128	GASKET, HEATER
7	6	18358	RIVET, 1/8 DIA., FLUSH BREAK, SST
6	2	106362	BRACKET, SIDE, INSULATION SUPPORT
5	2	106360	INSULATION, CUT, COMBUSTION CHAMBER
4	1	23114	WASHER, LOCK, INT. TOOTH, #10
3	1	14659	NUT, HEX, 10-24
2	1	106361	BRACKET, REAR, INSULATION SUPPORT
1	1	106407	GENERATOR ASSY, WELD, SC 5.1 GAS

NOTE:

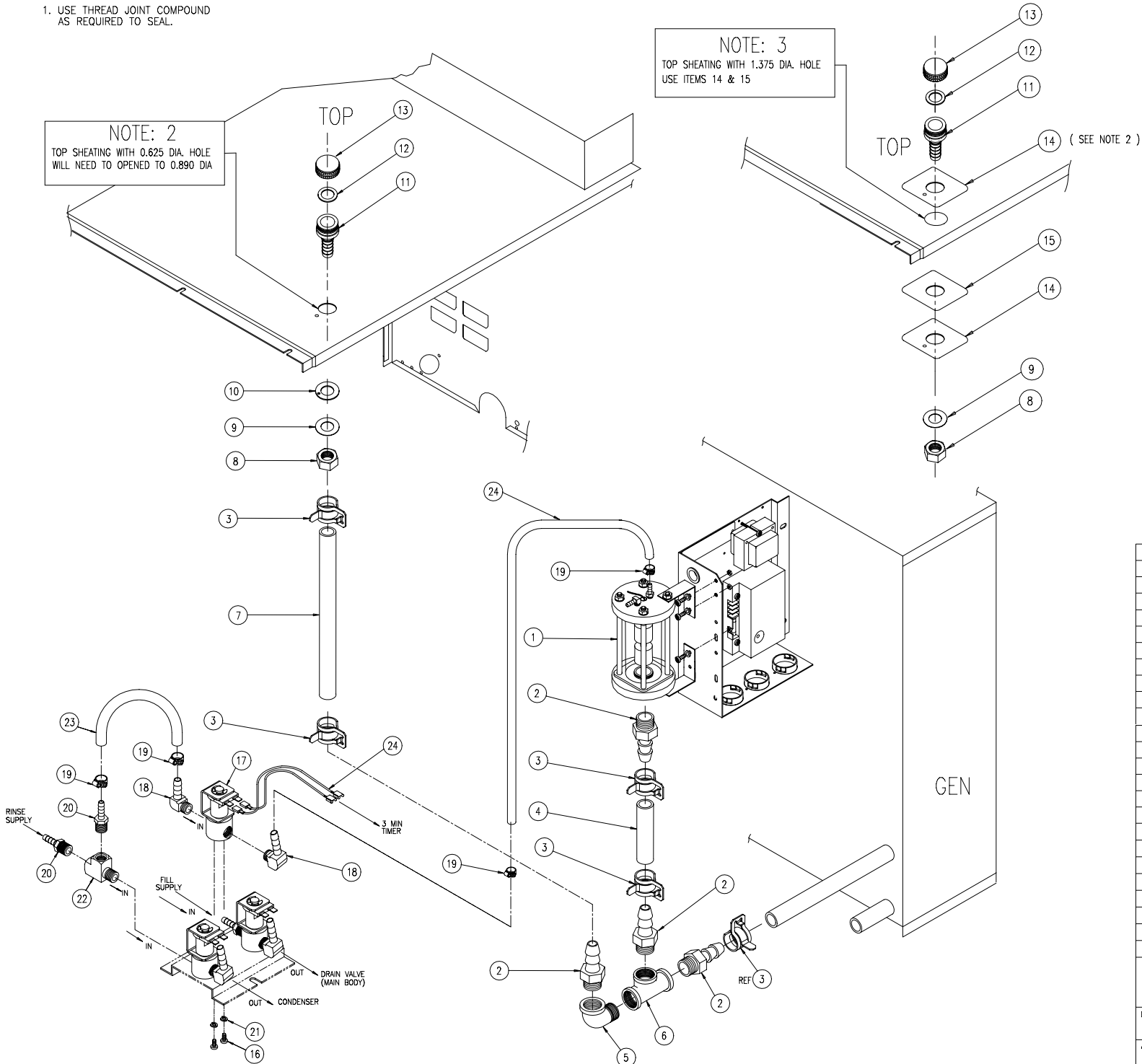
1. USE THREAD JOINT COMPOUND
AS REQUIRED TO SEAL.

NOTE: 2

TOP SHEATING WITH 0.625 DIA. HOLE
WILL NEED TO BE OPENED TO 0.890 DIA

NOTE: 3

TOP SHEATING WITH 1.375 DIA. HOLE
USE ITEMS 14 & 15



EXPLODED VIEW

KIT P/N 110129

LET.	REVISIONS	DATE	BY
------	-----------	------	----

24	1	300013	HARNES, WIRE, RINSE VALVE
23	1	105850	TUBING, NT-80, 1/4 X 6
22	1	106663	FITTING, MALE RUN, 1/4 MPT X 1/4 FPT
21	2	102641	WASHER, SPLIT LOCK, # 8 SST
20	2	104381	FITTING, HOSE, 1/4 H X 1/4 MPT
19	4	106526	CLAMP, HOSE, 3/8 X 5/8 X 5/16 W
18	2	105786	FITTING, HOSE, 1/4 H X 1/4 MPT, 90°
17	1	22218	SOLENOID VALVE
16	2	19114	SCREW,TRUSS HD,# 8-32 X 0.375
15	2	108723	DESCALER PORT CONVERSION MTG. GASKET
14	2	108724	DESCALER PORT CONVERSION MTG. PLATE
13	1	108031	CAP, HOSE NUT
12	1	108034	WASHER
11	1	109642	FITTING DESCALER
10	1	109646	GASKET
9	1	109645	WASHER
8	1	109644	NUT, HEXJAM
7	1	08511	HOSE, STEAM, WHITE EPDM, FDA 3/4 X 14.000 LG
6	1	20206	TEE, 3/4 , BRASS
5	1	05231	ELL, STREET, 90°, 3/4 BRASS
4	1	08511	HOSE, STEAM, WHITE EPDM, FDA 3/4 X 4.500 LG
3	4	107312	CLAMP, HOSE, METAL TENSION, 1-1/8 OD HOSE
2	4	06240	FITTING, 3/4 H X 3/4 MPT, BRASS
1	1	105877	FLOAT ASSEMBLY, STEAMCRAFT
ITEM	QTY	PART NO.	DESCRIPTION
TOLERANCES (EXCEPT AS NOTED)			CLEVELAND RANGE INC. 1333 East 179th St. Cleveland, Ohio 44110-2574
DECIMAL ± .005	SCALE NA	DRAWN BY VDS	APPROVED BY
ANGULAR ± 1°	TITLE INSTRUCTION, KIT, CONVERT, PROBE TO FLOAT & 3/4 DESCALER S/C 5.1, GAS		
AC	DATE 9-21-00	DRAWING NO. C-260AUC (Sht 1of2)	REV A



Convection Steamers

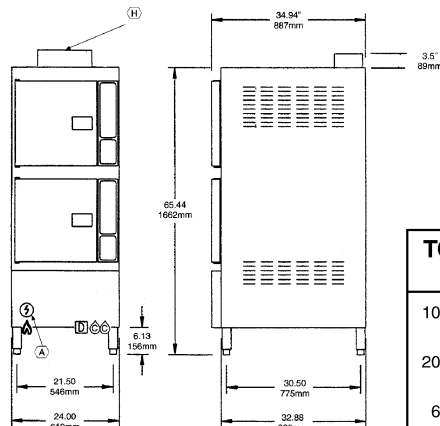
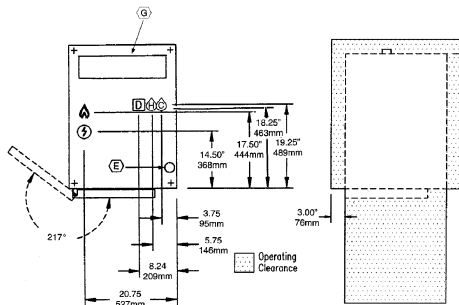
SteamCraft® Ultra 10

TWO COMPARTMENT FLOOR MODEL DESIGN
PRESSURELESS CONVECTION STEAMER
Gas Steam Generator, 125M BTU

MODEL: ☐ 24-CGA-10

ITEM NUMBER _____

JOB NAME / NUMBER _____



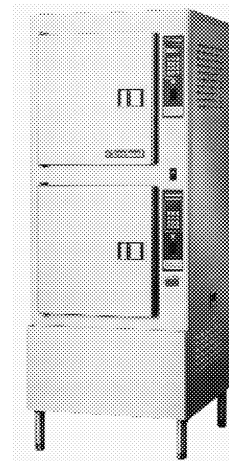
TOTAL CAPACITY (2 Compartments)

- 10 — 12" x 20" x 2 1/2" Cafeteria Pans or
- 20 — 12" x 20" x 1" Cafeteria Pans or
- 6 — 12" x 20" x 4" Cafeteria Pans

UTILITY CONNECTIONS

- (A) Electrical Supply
- (B) Cold Water Supply for Generator and Water Injection.
3/8" Dia. IPS (for water treatment conn.)
Unit comes with a 50 Mesh Water Strainer (installation required)
- (C) Drain: 1.50" (38mm) Dia.
- (D) Inlet for Generator Deliming Solution
- (E) Gas Supply .50" (13mm) Dia.
- (F) Flue Gas Exhaust from Boiler
- (G) Flue Diverter (if required)

Shown with optional
Electronic Timer



SHORT FORM SPECIFICATION







Shall be CLEVELAND, SteamCraft® Ultra 10, two compartments, Floor Model Steamer, Model 24-CGA-10, single, large capacity Gas-fired Atmospheric Steam Generator, 125M BTU input. Remote Probe Type Water Level Controls. Steam Generator with Automatic Water Fill on start up, Automatic Generator Blowdown, Electronic Spark Ignition and Generator Stand-by for instant steam. Choice of Compartment Controls, Manual By Pass Operation Mode, Compensating Thermostat, Patented Cold Water Condenser design, Type 430 Stainless Steel exterior and cooking compartments.

WATER QUALITY REQUIREMENT

The quality of water varies greatly from region to region. *Steam equipment must be blown down daily and chemically descaled periodically to ensure proper operation.* To minimize service problems caused by the accumulation of minerals and chemicals in water, review the following quality guidelines with a local water treatment specialist. Inlet water that is beyond these specified guidelines should be treated to achieve the acceptable limits.

TOTAL DISSOLVED SOLIDS	less than 60 parts per million
TOTAL ALKALINITY	less than 20 parts per million
SILICA	less than 13 parts per million
pH FACTOR	greater than 7.5
CHLORINE	less than 30 parts per million

A typical water quality analysis can be secured from your local water district. Water that is potable does not guarantee compatibility with steam equipment.

GAS 	ELECTRIC 	COLD WATER 	DRAINAGE 						
75,000 BTU - 1 Compartment, 125,000 BTU - 2 Compartments	115V - 1 Phase 1 Fan & Controls - 150 Watts	35 psi minimum 60 psi maximum  ¾" Dia. IPS for Generator (for water treatment connection)  ¾" Dia. IPS for Condenser	1½" Dia. Do not connect other units to this drain. Drain line must be vented. No PVC pipe for drain.						
<table><tr><th colspan="2">SUPPLY PRESSURE</th></tr><tr><th>NATURAL</th><th>PROPANE</th></tr><tr><td>4.00" W.C. minimum 14.00" W.C. maximum</td><td>12.00" W.C. minimum 14.00" W.C. maximum</td></tr></table>		SUPPLY PRESSURE		NATURAL	PROPANE	4.00" W.C. minimum 14.00" W.C. maximum	12.00" W.C. minimum 14.00" W.C. maximum		
SUPPLY PRESSURE									
NATURAL	PROPANE								
4.00" W.C. minimum 14.00" W.C. maximum	12.00" W.C. minimum 14.00" W.C. maximum								
Manufacturer must be notified if unit will be used above 2,000 ft. altitude.									

Cleveland Range reserves right of design improvement or modification, as warranted.

Cleveland Range, LLC
Ph: 1-216-481-4900 Fx: 1-216-481-3782

1333 East 179th St., Cleveland, Ohio, U.S.A. 44110
Visit our Web Site at www.clevelandrange.com

CLEVELAND RANGE 24CGA10

SEQUENCE OF OPERATIONS

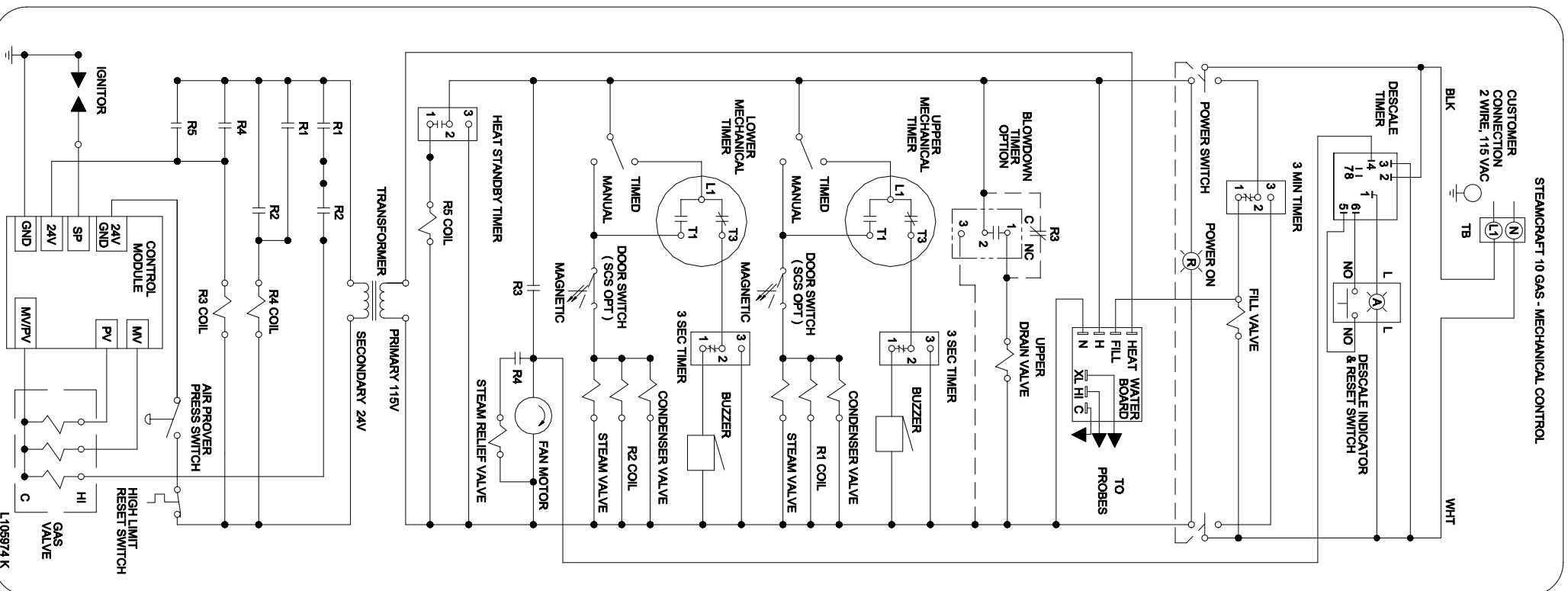
Mechanical Timer

1. To turn the unit on, depress the red on/off rocker switch.
 - 115 VAC is sent to the red indicator light.
 - 115 VAC is sent to normally open drain valve closing it.
 - 115 VAC is sent to H and N of the water level board
 - 115 VAC is sent to the timed/manual switches.
2. With the water level board energized and no water in the generator
 - After a 5 second delay 115 VAC is sent from the FILL terminal to the fill solenoid.
 - The fill solenoid opens and the generator fills through the drain valve.
 - The water fills to the low probe shorting it to ground
 - 115 VAC is sent from the HEAT terminal to the 24 VAC heat circuit transformer.
 - 115 VAC is sent to the heat standby timer which will energize 20 seconds every 6 minutes to maintain heat while unit is idle
3. When the timed/manual switch is in the timed position and time is on the timer for the top cabinet only
 - 115 VAC is sent from the timer through the door switch (optional) to the steam solenoid, condensate solenoid and R1 relay.
 - R1 is energized closing the R1 contacts.
 - 24 VAC is sent from the 24VAC transformer to the normally open contacts of R2.
 - 24 VAC is sent from the 24VAC transformer to the R4 coil.
 - R4 is energized and the R4 contacts are closed.
 - 24 VAC is sent to one side of the ignition module.
 - 24 VAC is sent to the R3 relay coil
 - R3 is energized and the R3 contacts are closed.
 - 115 VAC is sent through the now closed R4 contacts to the normally open steam relief valve closing it.
 - 115 VAC is sent to the fan motor.
 - The fan motor is energized and the air prover switch closes.
 - 24 VAC is sent through the normally closed highlimit and the now closed air prover switch to the other side of the ignition module.
4. With 24 VAC to both sides of the ignition module.
 - Spark is sent to the igniter.
 - 24VAC is sent to the pilot coil on the gas valve and gas is sent to the pilot.
 - When flame is generated and 1.0 micro amps DC is detected, 24 VAC is sent to the main coil of the gas valve igniting the main burner on low flame.
 - Steam is energized and sent to the cooking compartment.
 - When the mechanical timer times down a buzzer will sound and the timer will open removing 115 VAC from the heat circuit.

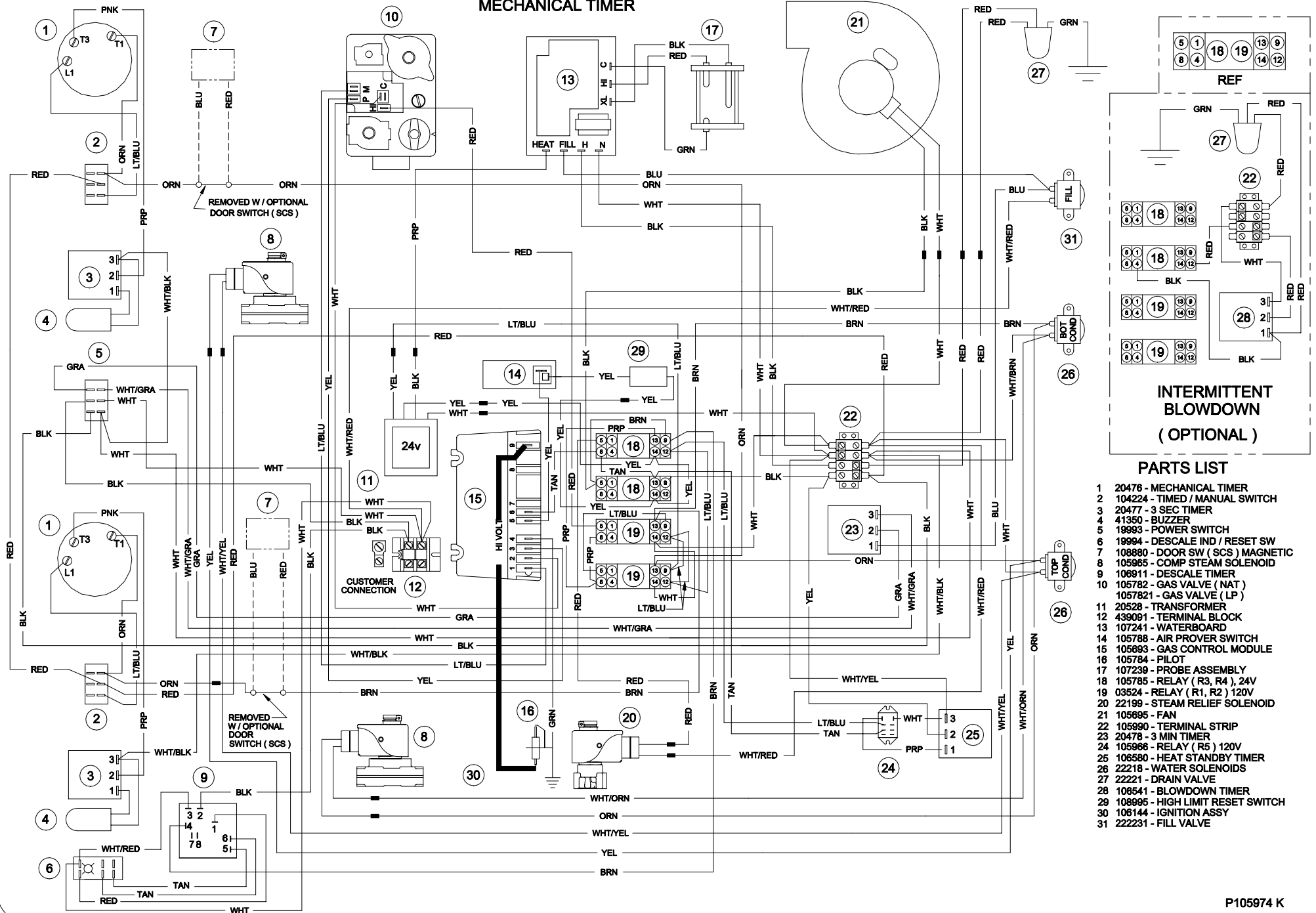
5. When the timed/manual switch is in the timed position and time is on the timer for the bottom cabinet only
 - 115 VAC is sent from the timer through the door switch (optional) to the steam solenoid, condensate solenoid and R2 relay.
 - R2 is energized closing the R2 contacts.
 - 24 VAC is sent from the 24VAC transformer to the normally open contacts of R1.
 - 24 VAC is sent from the 24VAC transformer to the R4 coil.
 - R4 is energized and the R4 contacts are closed.
 - 24 VAC is sent to one side of the ignition module.
 - 24 VAC is sent to the R3 relay coil.
 - R3 is energized and the R3 contacts are closed.
 - 115 VAC is sent through the now closed R4 contacts to the normally open steam relief valve closing it.
 - 115 VAC is sent to the fan motor.
 - The fan motor is energized and the air prover switch closes sending 24 VAC to the other side of the ignition module.
6. With 24 VAC to both sides of the ignition module.
 - Spark is sent to the igniter.
 - 24VAC is sent to the pilot coil on the gas valve and gas is sent to the pilot.
 - When flame is generated and 1.0 micro amps DC is detected, 24 VAC is sent to the main coil of the gas valve igniting the main burner on low flame.
 - Steam is energized and sent to the cooking compartment.
 - When the timer times down, the closed contact will open removing 115 VAC from the heat circuit.
 - 115 VAC will be sent through the now closed contacts to the 3-second timer.
 - For 3 seconds 115 VAC will be sent to the buzzer and it will buzzzzzz.
7. When the timed/manual switch is in the timed position and time is on the timer for both cabinets
 - 115 VAC is sent from the timer through the door switch (optional) to both steam solenoids, both condensate solenoids and both relays.
 - Both relays are energized closing the relay contacts.
 - 24 VAC is sent from the 24VAC transformer through the R1 and R2 contacts to the high coil on the gas valve.
 - 24 VAC is sent from the 24VAC transformer to the R4 coil.
 - R4 is energized and the R4 contacts are closed.
 - 24 VAC is sent to one side of the ignition module.
 - 24 VAC is sent to the R3 relay coil.
 - R3 is energized and the R3 contacts are closed.
 - 115 VAC is sent through the now closed R4 contacts to the normally open steam relief valve closing it.
 - 115 VAC is sent to the fan motor.
 - The fan motor is energized and the air prover switch closes sending 24 VAC to the other side of the ignition module.

8. With 24 VAC to both sides of the ignition module.
 - Spark is sent to the igniter.
 - 24VAC is sent to the pilot coil on the gas valve and gas is sent to the pilot.
 - When flame is generated and 1.0 micro amps DC is detected 24 VAC is sent to the main coil of the gas valve igniting the main burner on high flame (the high coil was energized in step 7).
 - Steam is energized and sent to the cooking compartments.
 - When the timers time down the buzzers will sound and each timer will open removing 115 VAC from the heat circuit.
9. When the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off.
10. After the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
11. 115 VAC is turned off by depressing the red on/off rocker switch.
 - 115 VAC is removed from the timer and heating circuits.
 - 115 VAC is removed from the normally open drain valve allowing the steamer to drain.
 - 115 VAC is sent to the 3-minute timer.
 - The fill solenoid is energized for 3 minutes flushing the drain.

STEAMCRAFT 10 GAS - MECHANICAL CONTROL



STEAMCRAFT 10 - GAS MECHANICAL TIMER



INTERMITTENT BLOWDOWN (OPTIONAL)

PARTS LIST

- 1 20476 - MECHANICAL TIMER
- 2 104224 - TIMED / MANUAL SWITCH
- 3 20477 - 3 SEC TIMER
- 4 41350 - BUZZER
- 5 19993 - POWER SWITCH
- 6 19994 - DESCALE IND / RESET SW
- 7 108880 - DOOR SW (SCS) MAGNETIC
- 8 105985 - COMP STEAM SOLENOID
- 9 108911 - DESCALE TIMER
- 10 105782 - GAS VALVE (NAT)
- 11 1057821 - GAS VALVE (LP)
- 12 20528 - TRANSFORMER
- 13 439091 - TERMINAL BLOCK
- 14 107241 - WATERBOARD
- 15 105788 - AIR PROVER SWITCH
- 16 105693 - GAS CONTROL MODULE
- 17 105784 - PILOT
- 18 107239 - PROBE ASSEMBLY
- 19 105785 - RELAY (R3, R4), 24V
- 20 03524 - RELAY (R1, R2) 120V
- 21 22199 - STEAM RELIEF SOLENOID
- 22 105695 - FAN
- 23 105990 - TERMINAL STRIP
- 24 20478 - 3 MIN TIMER
- 25 105966 - RELAY (R5) 120V
- 26 106580 - HEAT STANDBY TIMER
- 27 22218 - WATER SOLENOIDS
- 28 22221 - DRAIN VALVE
- 29 108541 - BLOWDOWN TIMER
- 30 108995 - HIGH LIMIT RESET SWITCH
- 31 108144 - IGNITION ASSY
- 32 222231 - FILL VALVE

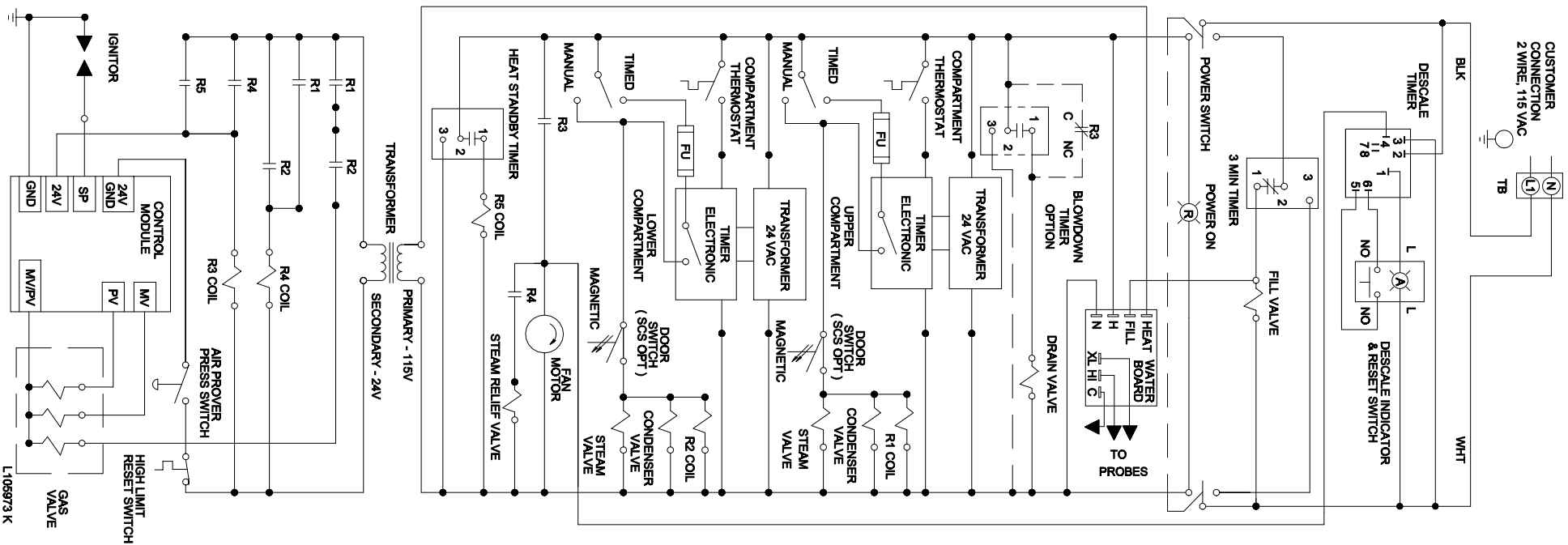
CLEVELAND RANGE 24CGA10
SEQUENCE OF OPERATIONS
Electronic Timer

1. To turn the unit on, depress the red on/off rocker switch.
 - 115 VAC is sent to the red indicator light.
 - 115 VAC is sent to normally open drain valve closing it.
 - 115 VAC is sent to H and N of the water level board
 - 115 VAC is sent to the 24VAC transformer for the electronic timer.
 - 115 VAC is sent to the normally open compartment thermostat switch.
 - 115 VAC is sent to the timed/manual switch.
2. With the water level board energized and no water in the generator
 - After a 5 second delay 115 VAC is sent from the FILL terminal to the fill solenoid.
 - The fill solenoid opens and the generator fills through the drain valve.
 - The water fills to the low probe shorting it to ground
 - 115 VAC is sent from the HEAT terminal to the 24 VAC heat transformer.
 - 115 VAC is sent to the heat standby timer which will energize 20 seconds every 6 minutes to maintain heat while unit is idle
3. When the timed/manual switch is in the timed position and time is on the timer for the top cabinet only
 - 115 VAC is sent from the timer through the door switch (optional) to the steam solenoid, condensate solenoid and R1 relay.
 - R1 is energized closing the R1 contacts.
 - 24VAC is sent from the 24VAC transformer to the normally open contacts of R2.
 - 24VAC is sent from the 24VAC transformer to the R4 coil.
 - R4 is energized and the R4 contacts are closed.
 - 24VAC is sent to one side of the ignition module.
 - 24VAC is sent to the R3 relay coil
 - R3 is energized and the R3 contacts are closed.
 - 115 VAC is sent through the now closed R4 contacts to the normally open steam relief valve closing it.
 - 115 VAC is sent to the fan motor.
 - The fan motor is energized and the air prover switch closes.
 - 24VAC is sent through the normally closed highlimit and the now closed air prover switch to the other side of the ignition module.
4. With 115 VAC to both sides of the ignition module.
 - Spark is sent to the igniter.
 - 24VAC is sent to the pilot coil on the gas valve and gas is sent to the pilot.
 - When flame is generated and 1.0 micro amps DC is detected, 24VAC is sent to the main coil of the gas valve igniting the main burner on low flame.
 - Steam is energized and sent to the cooking compartment.

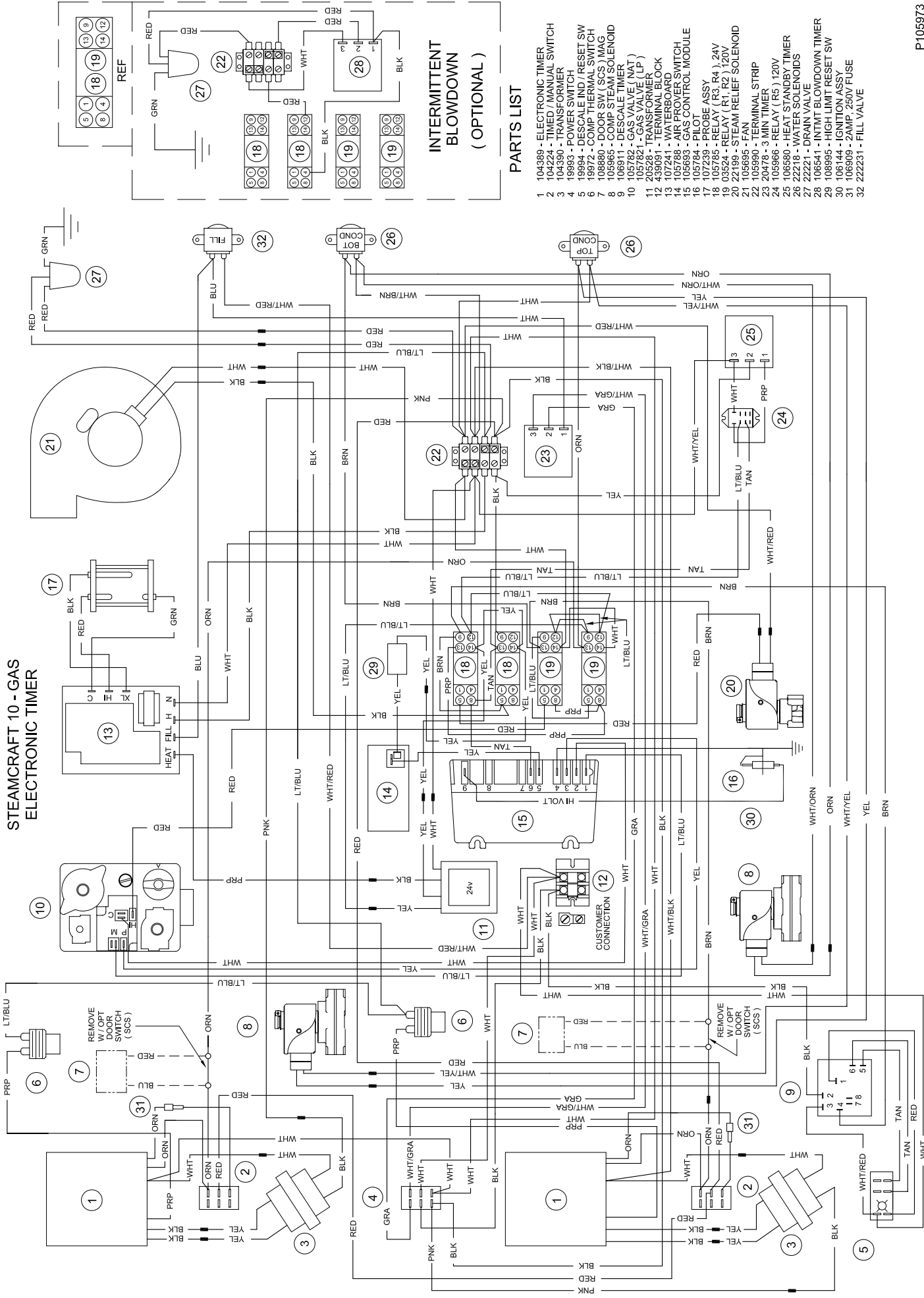
- When the cooking compartment reaches 193 degrees the compartment thermostat closes sending 115 VAC to the timer.
 - The timer will then begin counting down.
 - When the electronic timer times down a buzzer will sound and the timer will open removing 115 VAC from the heat circuit.
5. When the timed/manual switch is in the timed position and time is on the timer for the bottom cabinet only
- 115 VAC is sent from the timer through the door switch (optional) to the steam solenoid, condensate solenoid and R2 relay.
 - R2 is energized closing the R2 contacts.
 - 24VAC is sent from the 24VAC transformer to the normally open contacts of R1.
 - 24VAC is sent from the 24VAC transformer to the R4 coil.
 - R4 is energized and the R4 contacts are closed.
 - 24VAC is sent to one side of the ignition module.
 - 24VAC is sent to the R3 relay coil.
 - R3 is energized and the R3 contacts are closed.
 - 115 VAC is sent through the now closed R4 contacts to the normally open steam relief valve closing it.
 - 115 VAC is sent to the fan motor.
 - The fan motor is energized and the air prover switch closes sending 24VAC to the other side of the ignition module.
6. With 24VAC to both sides of the ignition module.
- Spark is sent to the igniter.
 - 24VAC is sent to the pilot coil on the gas valve and gas is sent to the pilot.
 - When flame is generated and 1.0 micro amps DC is detected, 24VAC is sent to the main coil of the gas valve igniting the main burner on low flame.
 - Steam is energized and sent to the cooking compartment.
 - When the cooking compartment reaches 193 degrees the compartment thermostat closes sending 115 VAC to the timer.
 - The electronic timer will stop flashing "PAUS" and then begin counting down.
 - When the timer times down a buzzer will sound and the timer will open removing 115 VAC from the heat circuit.
7. When the timed/manual switch is in the timed position and time is on the timer for both cabinets
- 115 VAC is sent from the timer through the door switch (optional) to both steam solenoids, both condensate solenoids and both relays.
 - Both relays are energized closing the relay contacts.
 - 24VAC is sent from the 24VAC transformer through the R1 and R2 contacts to the high coil on the gas valve.
 - 24VAC is sent from the 24VAC transformer to the R4 coil.
 - R4 is energized and the R4 contacts are closed.
 - 24VAC is sent to one side of the ignition module.

- 24VAC is sent to the R3 relay coil.
 - R3 is energized and the R3 contacts are closed.
 - 115 VAC is sent through the now closed R4 contacts to the normally open steam relief valve closing it.
 - 115 VAC is sent to the fan motor.
 - The fan motor is energized and the air prover switch closes sending 24VAC to the other side of the ignition module.
8. With 24VAC to both sides of the ignition module.
- Spark is sent to the igniter.
 - 24VAC is sent to the pilot coil on the gas valve and gas is sent to the pilot.
 - When flame is generated and 1.0 micro amps DC is detected 24VAC is sent to the main coil of the gas valve igniting the main burner on high flame (the high coil was energized in step 7).
 - Steam is energized and sent to the cooking compartments.
 - When the cooking compartments reach 193 degrees the compartment thermostats close sending 115 VAC to the timers.
 - The timers will then begin counting down.
 - When the timers time down a buzzer will sound and the timer will open removing 115 VAC from the heat circuit.
9. When the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off.
10. After the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
11. 115 VAC is turned off by depressing the red on/off rocker switch.
- 115 VAC is removed from the timer and heating circuits.
 - 115 VAC is removed from the normally open drain valve allowing the steamer to drain.
 - 115 VAC is sent to the 3-minute timer.
 - The fill solenoid is energized for 3 minutes flushing the drain.

STEAMCRAFT 10 GAS - ELECTRONIC CONTROL



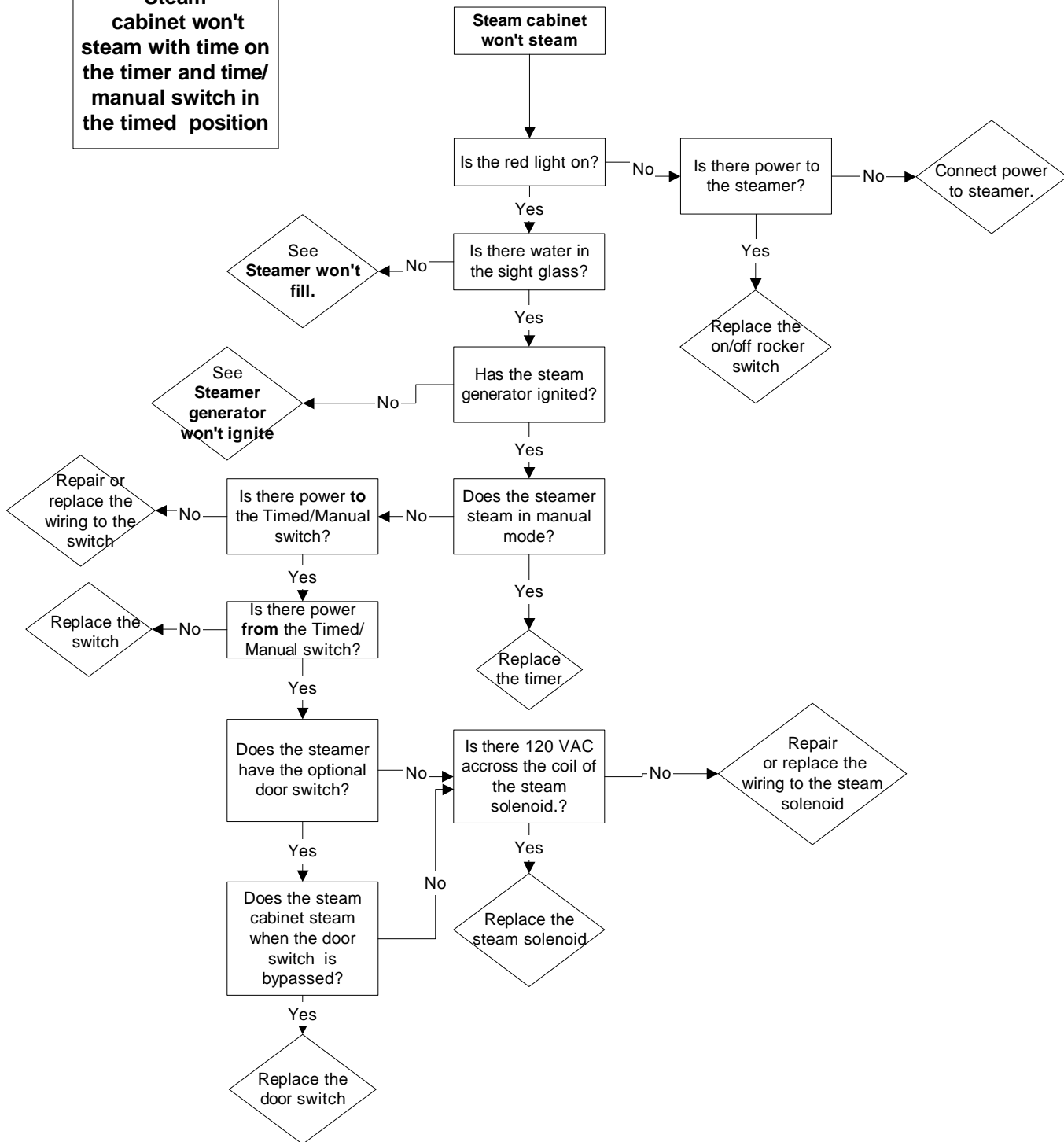
STEAMCRAFT 10 - GAS ELECTRONIC TIMER



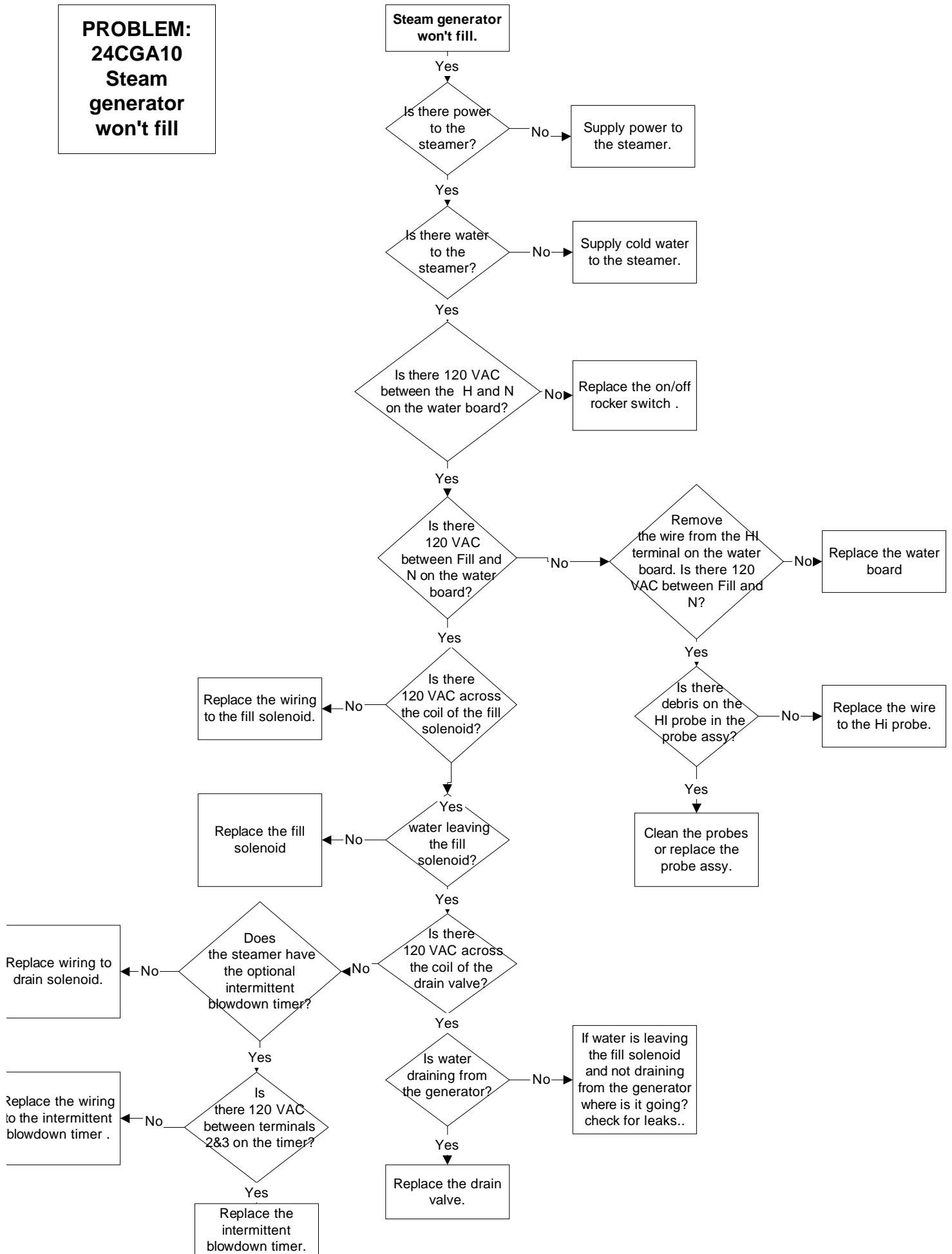
PARTS LIST

- | | |
|----|--------------------------------|
| 1 | 104399 - ELECTRONIC TIMER |
| 2 | 104424 - TIMED / MANUAL SWITCH |
| 3 | 104390 - TRANSFORMER |
| 4 | 104993 - POWER SWITCH |
| 5 | 109994 - DESCAL INH / RESET SW |
| 6 | 109972 - COMP THERMAL SWITCH |
| 7 | 108860 - DOOR SW (SCS) MAG |
| 8 | 105985 - COMP STEAM SOLENOID |
| 9 | 106911 - DESCAL TIMER |
| 10 | 105782 - GAS VALVE (NAT) |
| 11 | 1057821 - GAS VALVE (LP) |
| 12 | 105928 - TRANSFORMER |
| 13 | 1043991 - TERMINAL BLOCK |
| 14 | 107241 - WIRING DIAGRAM |
| 15 | 105993 - GAS CONTROL SWITCH |
| 16 | 105784 - PILOT |
| 17 | 107239 - PROBE ASSY |
| 18 | 105785 - RELAY (R3, R4), 24V |
| 19 | 03524 - RELAY (R1, R2) 120V |
| 20 | 22199 - STEAM RELIEF SOLENOID |
| 21 | 105695 - FAN |
| 22 | 105990 - TERMINAL STRIP |
| 23 | 20478 - 3 MIN TIMER |
| 24 | 105966 - RELAY (R5) 120V |
| 25 | 106580 - HEAT STANDBY TIMER |
| 26 | 22218 - WATER SOLENOIDS |
| 27 | 22221 - DRAIN VALVE |
| 28 | 106541 - INTMT BLOWDOWN TIMER |
| 29 | 108995 - HIGH LIMIT RESET SW |
| 30 | 106144 - IGNITION ASSY |
| 31 | 106909 - 2AMP, 250V FUSE |
| 32 | 22231 - FILL VALVE |

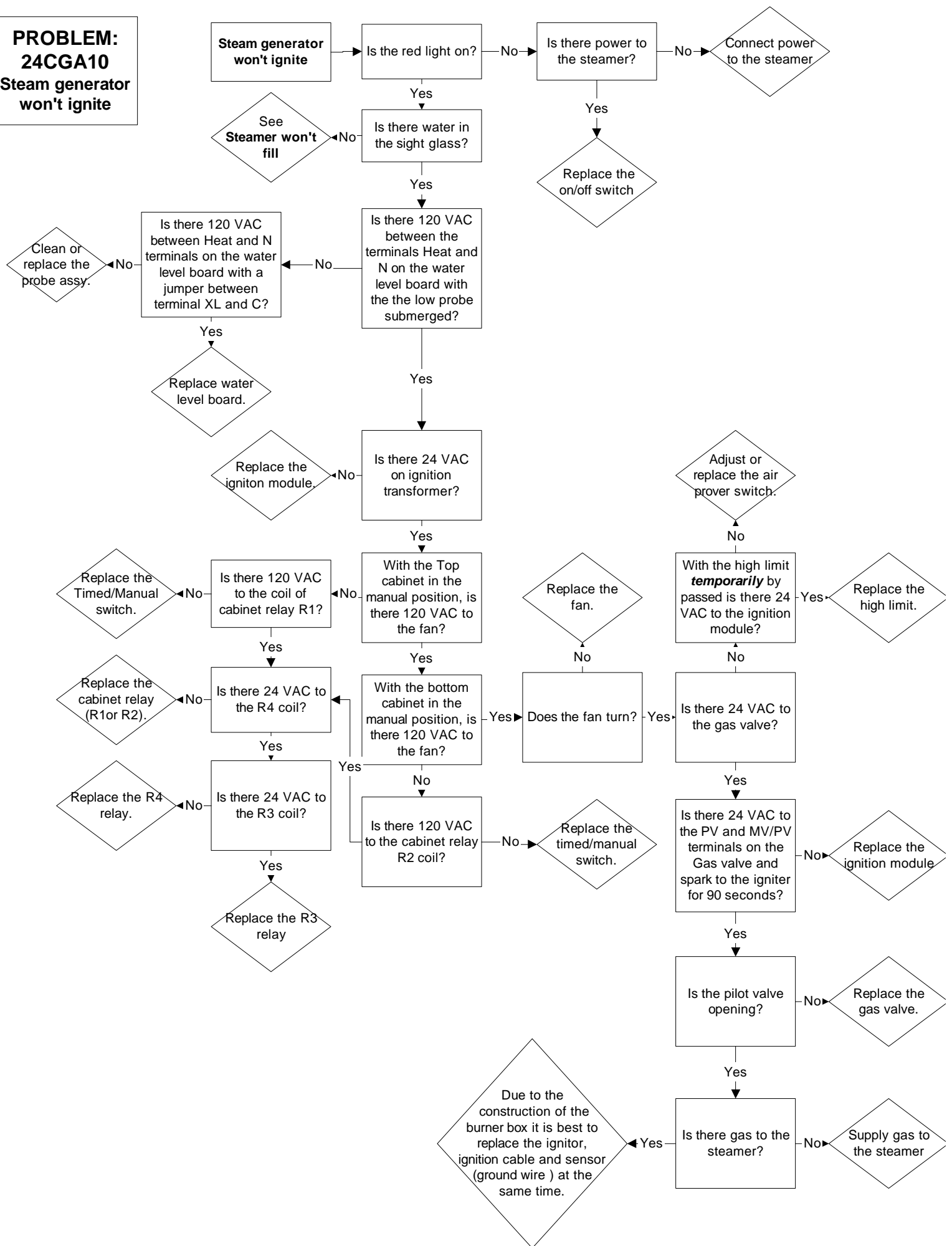
PROBLEM:
24CGA10
 Steam
 cabinet won't
 steam with time on
 the timer and time/
 manual switch in
 the timed position



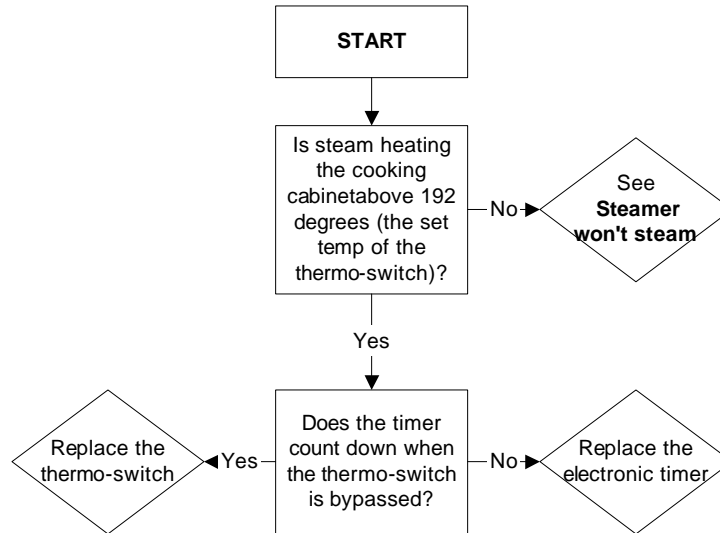
**PROBLEM:
24CGA10
Steam
generator
won't fill**



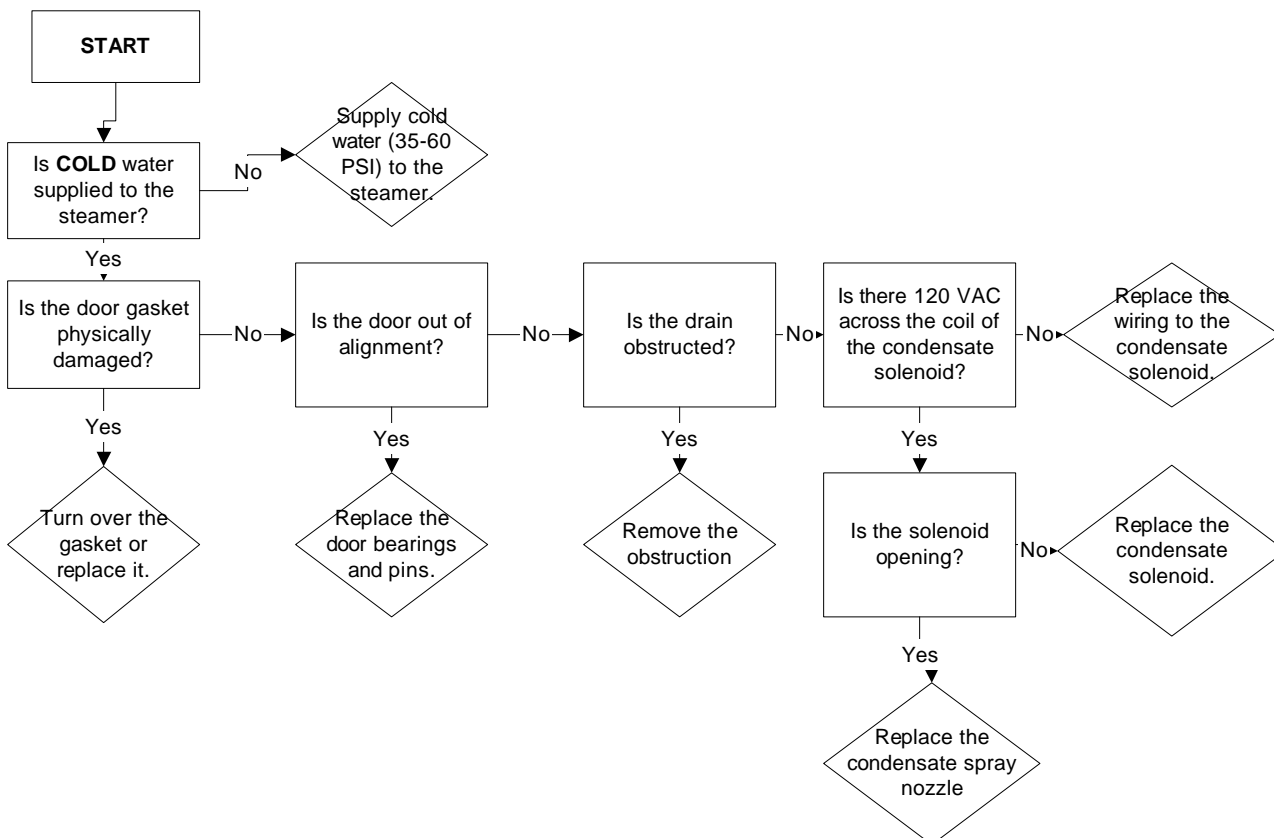
PROBLEM:
24CGA10
Steam generator
won't ignite

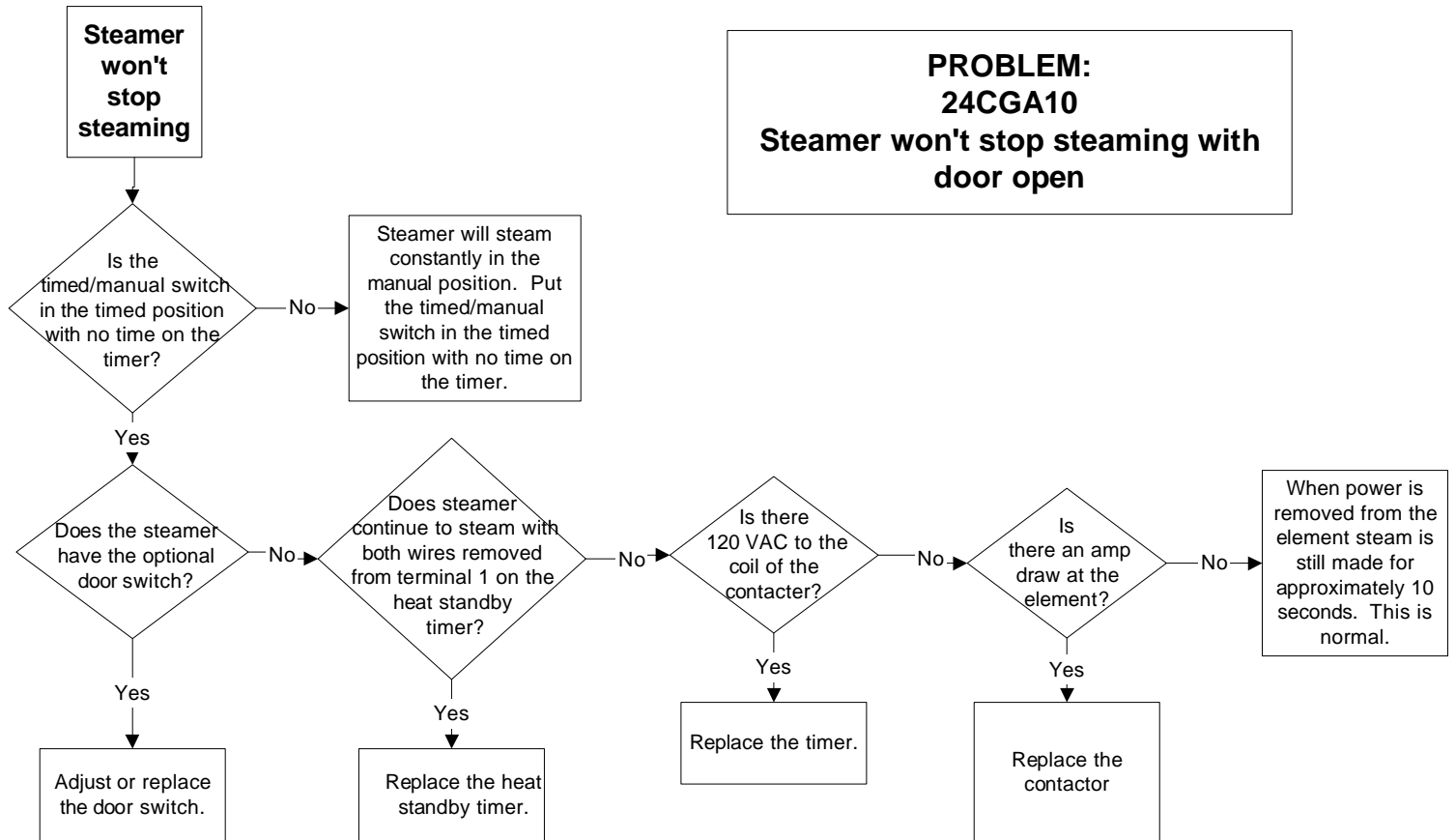


PROBLEM:
24CGA10
Electronic timer displays "PAUS" and won't count down

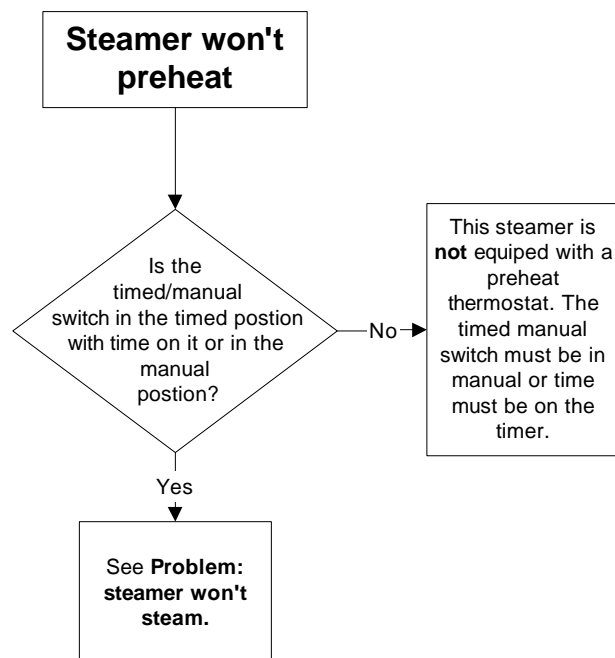


PROBLEM:
24CGA10
Steam leaks around the door.

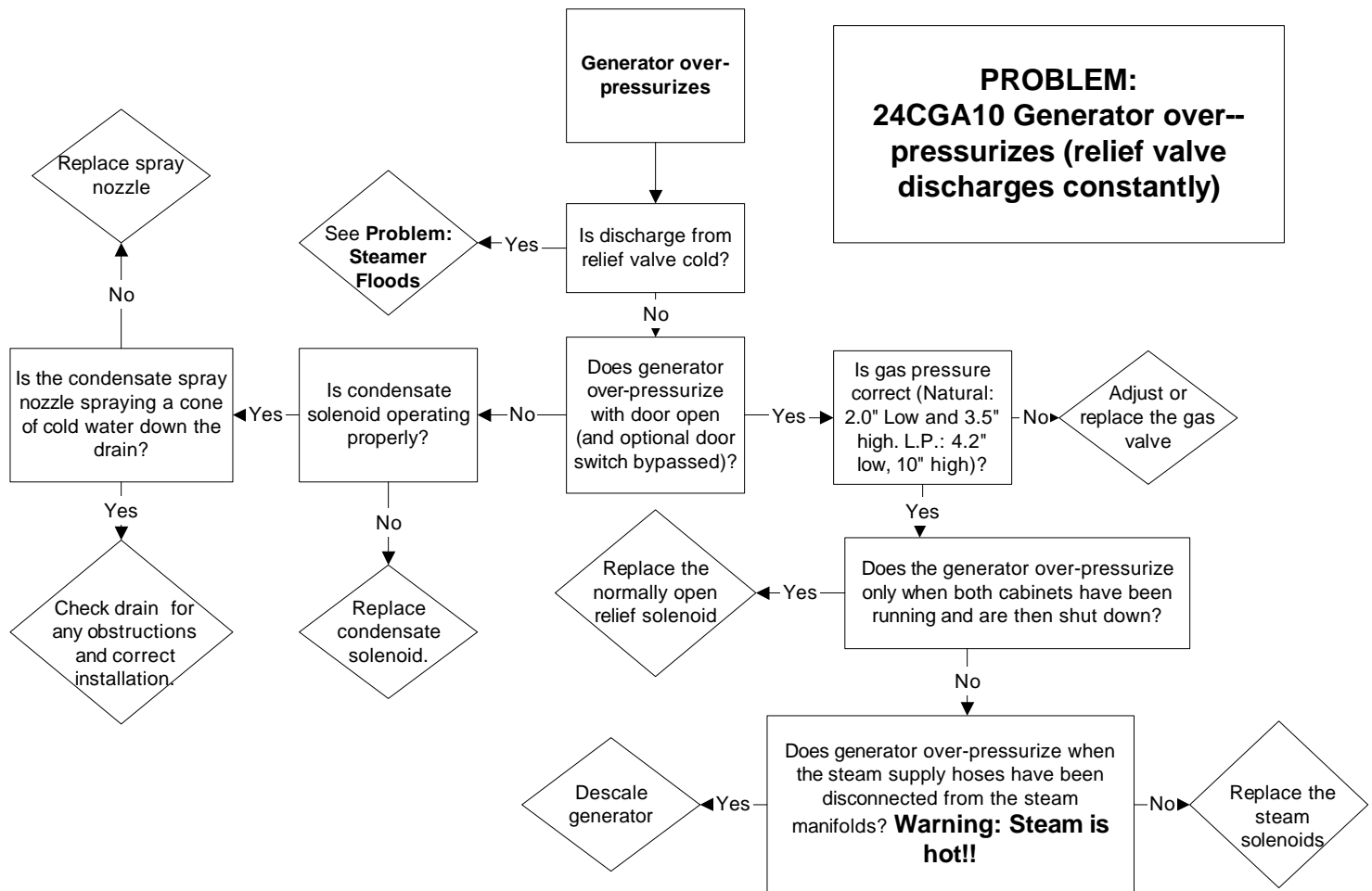




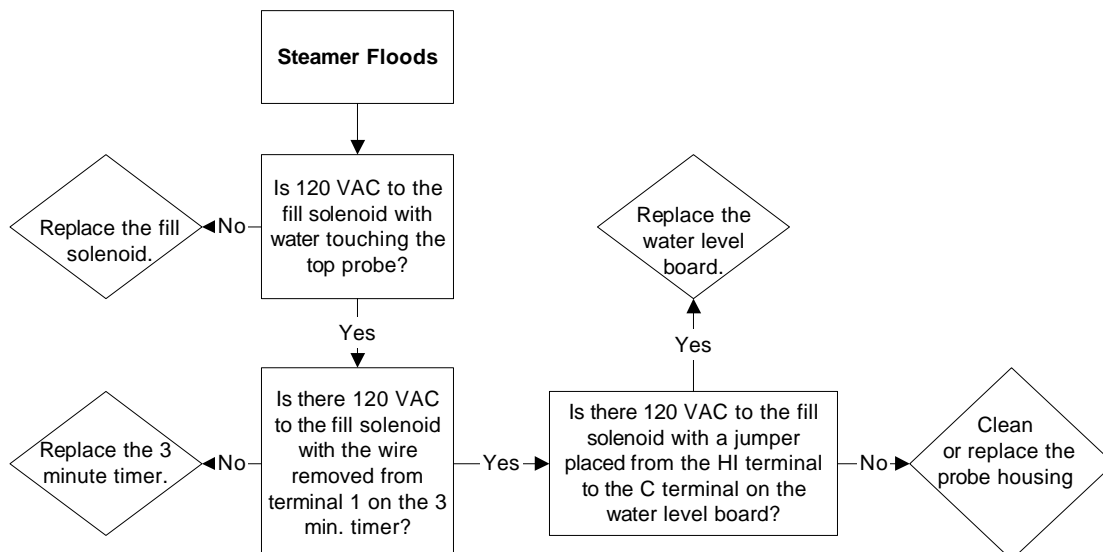
**Problem:
24CGA10
Steamer won't preheat**



**PROBLEM:
24CGA10 Generator over--
pressurizes (relief valve
discharges constantly)**



Problem: 24CGA10 Steamer Floods (Water is entering cabinet through the steam nozzles)



Instruction No. 260AOY
Revision B

Conversion Kit High Limit Reset Switch
24CGA10 - Ultra 10
(KIT P/N 109023)

The purpose of this kit is to provide instructions for adding a high limit safety switch to eliminate a dry fire in the generator.

- Turn off both the electrical power and the gas supply.
- Remove the right side cover
- Make sure the generator has drained and is cool to the touch.
- Check for scale in the generator.

Note: If there is scale in the generator, it must be removed, before installing the bulb.

- Put the bulb and capillary through the fitting in the blockoff plate assembly.
- Next, install the bulb parallel with and against the fire tube and secure it with retaining clamp.
- Install the blockoff assembly on the generator.

Note: Remember to install a new gasket.

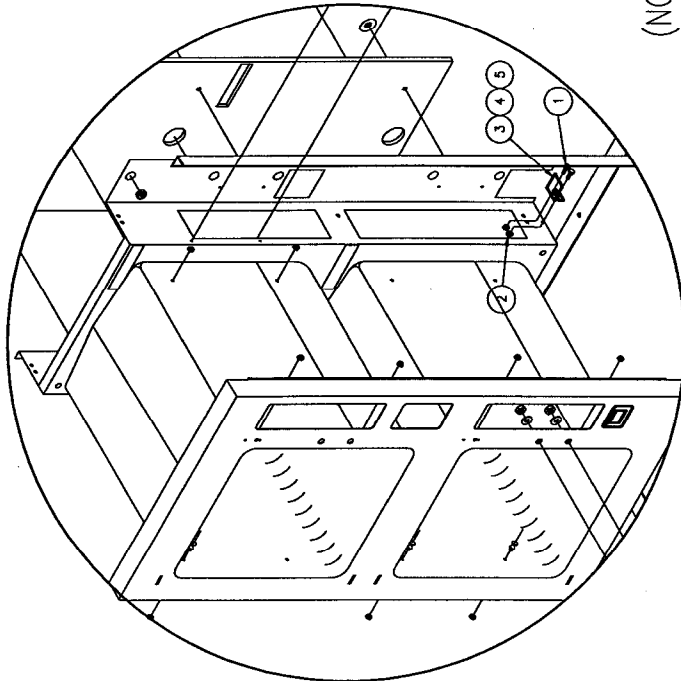
- Next, install the mounting bracket to the frame as shown in the drawing (1059524) and mount the high limit reset switch to this bracket. Care should be taken not to kink the capillary tube.
- There are two wires attached to the high limit reset switch. Take one wire and attach it to one terminal on the air prover switch. Take the wire that was removed from the air prover switch and plug it into the second wire from the reset switch.
- This completes the installation.
- Before starting the generator make sure the high limit reset switch has been reset.
- Bring the generator up to steam and check for leaks.
- Install the replacement electrical label over existing label near bottom.

Kit #109023

Parts included in kit:

109002	Blockoff plate assembly
07128	Gasket
108995	High limit reset switch
109012	Harness, high limit reset switch
109008	High limit, reset switch mounting bracket
19170	1/4-20 x .625 lg. hex hd. screw sst (2)
14665	1/4-20 hex lock nut elastic, sst w/nylon insert (2)
1059631	Label
1059524	Dwg ----- final assy., instruction
109464	High Limit Retaining Clamp Weld
260AOY	Installation, instructions

LET.	REVISIONS	BY
A	RETRO-KIT PER E.O. #C-5196	8-17-98 EJK
B	CORRECTED P/N ON ITEM 3	1-6-98 DS



(NOT SHOWN)

(NOT SHOWN)

EXPLODED VIEW
SWITCH MTG LOCATION

5	1	109464	CLAMP WELD, HIGH LIMIT RETAINING, SMALL
4	1	108995	SWITCH, HIGH LIMIT RESET
3	1	109008	BRACKET, MOUNTING, HIGH LIMIT SWITCH
2	2	14665	NUT, HEX 1/4-20UNC, ELASTIC LOCK
1	2	19170	SCREW, HEX HD. 1/4-20UNC x .625 LG.
ITEM	QTY	PART NO.	DESCRIPTION

CLEVELAND RANGE

1333 East 179th St. Cleveland, Ohio 44110-2574

DECIMAL $\pm N/A$	SCALE 1=6	DRAWN BY P. TAYLOR	APPROVED BY
ANGULAR $\pm 1^\circ$	TITLE INSTRUCTION DWG. HIGH LIMIT RESET SWITCH S/C ULTRA 10, GAS H.I.L.		

AC	DATE 8-17-98	DRAWING NO. A-1059524	REV B
----	-----------------	--------------------------	----------

THIS DESIGN DESCRIBES A PROPRIETARY ITEM AND IS THE PROPERTY OF CLEVELAND RANGE.
THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE APPROVAL OF CLEVELAND RANGE



Convection Steamers

Gemini®

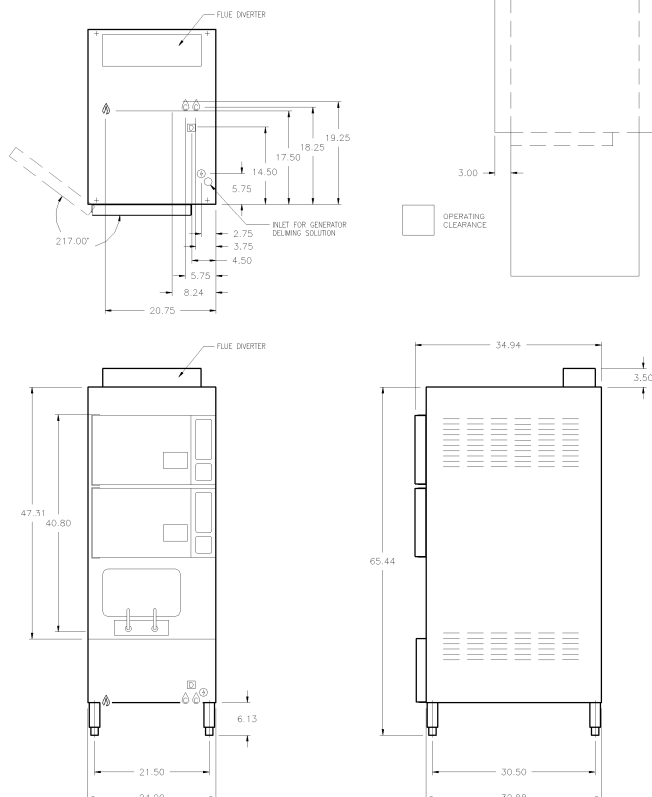
PRESSURELESS STEAMER

TWIN, INDEPENDENT GAS-FIRED
GENERATORS

MODEL: ☐ 24-CGA-6

ITEM NUMBER _____

JOB NAME / NUMBER _____



SHORT FORM SPECIFICATION

Cleveland **Gemini®** Model 24CGA6, Two compartment steamer, one compartment storage. Independent steam generator, gas valve and water level control system. Patented remote probe-type water level controls. Patented Brass "Steam Jet" distribution system. Two-piece free-floating compartment door. 14 gauge stainless steel cavity and door. Pullout service drawer for controls and Gemini Drain/Power Control System.

Each Compartment has Capacity for:
Three 2½" x 12" x 20" Steam Table Pans
Six 1" x 12" x 20" Steam Table Pans
Two 4" x 12" x 20" Steam Table Pans

Many local codes exist and it is the responsibility of the owner and installer to comply with those codes. Consult a local water treatment specialist for an on-site water analysis for recommendations concerning feed water treatment.

⚡ GAS			⚡ ELECTRIC	💧 COLD WATER	CLEARANCE	🚰 DRAINAGE
1¼" IPS line size, ¾" (13mm) connection			120V-1Phase, 60 Hz.	35 psi minimum	RIGHT = 12.00"	1½" dia.
NATURAL	PROPANE	BTU	2 Fans & controls	60 psi maximum	LEFT = 3.00"	Do not connect other units to this drain
Piping ¾" N.P.T.	Piping ¾" N.P.T.	35,000 each	150 watts each	(1) ¾" dia. IPS for Generator	REAR = 3.00"	Drain must be vented
Supply pressure	Supply pressure	Generator		(1) ¾" dia. IPS	Allow 6" space min. from rear and sides	Do not use PVC pipe
4.50" W.C. Min.	11.00" W.C. Min.			Condenser	When located near combustible walls	
14.00" W.C. Max.	14.00" W.C. Max.					
Manufacturer must be notified if unit will be used above 2,000 feet						

Cleveland Range reserves right of design improvement or modifications, as warranted.

Cleveland Range, LLC

Ph: 1-216-481-4900 Fx: 1-216-481-3782

1333 East 179th St., Cleveland, Ohio, U.S.A. 44110

Visit our Web Site at www.clevelandrange.com

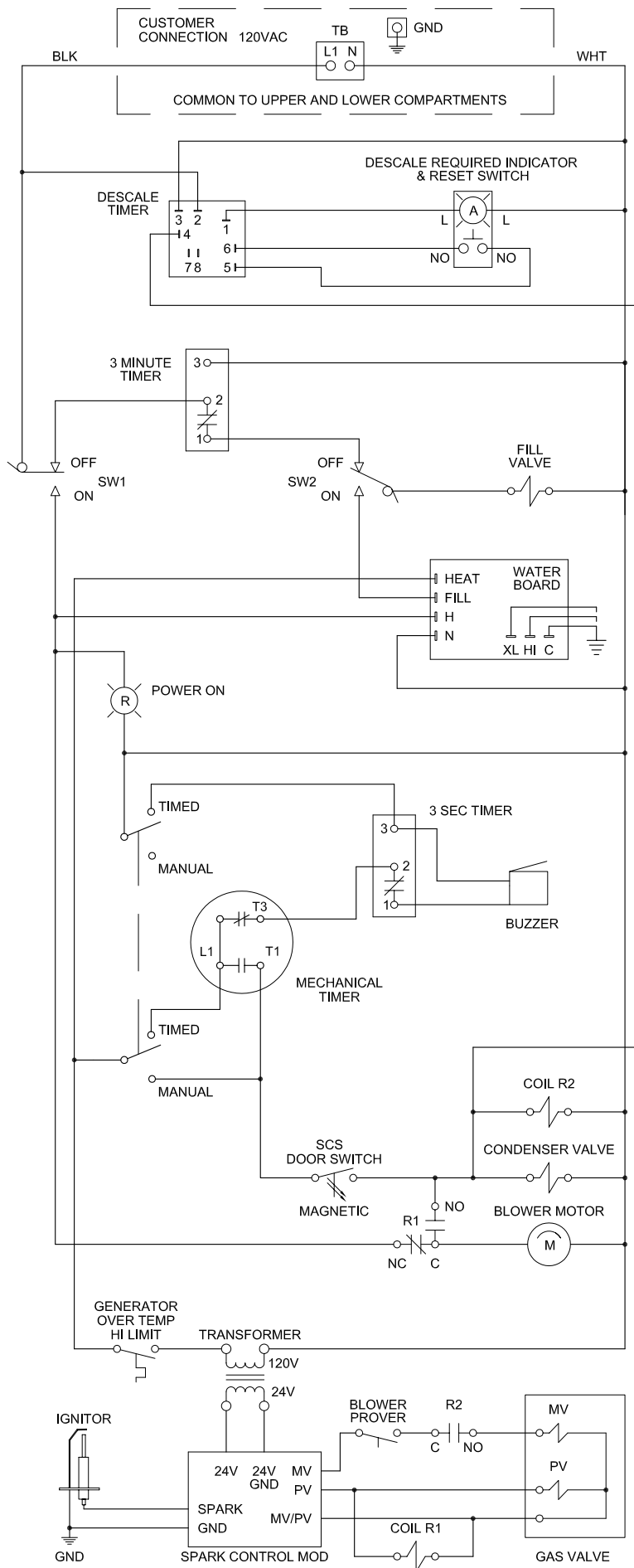
CLEVELAND RANGE 24CGA6 SEQUENCE OF OPERATIONS Mechanical Timer

Starting with the timed manual switch in the timed position, and no time on the timer.

1. To turn the unit on, turn the ON/OFF lever clockwise to the ON position
 - This mechanically closes the drain.
 - The red “Power On” indicator is energized.
 - 115 VAC is sent through the timer to the three-second timer, which activates the buzzer for three seconds.
 - 115 VAC is sent through the normally closed R1 contacts to the fan motor, turning it ON
 - 115 VAC is sent to H and N of the water level board
2. With the water level board energized and no water in the generator
 - 115 VAC is sent from the FILL terminal to the fill solenoid.
 - The fill solenoid opens and the generator fills.
3. The water fills to the low probe shorting it to ground
 - 115 VAC is sent from the HEAT terminal to the timed manual switch.
 - 115 VAC is sent through the high limit to the primary of the 24VAC transformer.
 - The water continues to fill until the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off
4. 24VAC is sent to the ignition module.
 - Spark is sent to the igniter.
 - 24VAC is sent to the pilot coil of the gas valve and the coil of the R1 relay.
 - The normally closed R1 contacts open, turning off the fan
 - The pilot lights, which acts as a standby heater. When the pilot is ignited and the module detects 1.0 micro amps DC, the MV terminal on the module is energized it remains in this standby heat mode until a cooking compartment is turned “ON” (see step 5).
5. When the timed/manual switch is in the timed position and time is on the timer or the timed manual switch is set to the manual position:
 - 115 VAC is sent to the clean light timer.
 - When the clean light timer times down 115 VAC is sent to the clean light switch.
 - When the clean light switch is depressed the timer is reset.
 - 115 VAC is sent from the compartment timer through the door switch to the condensate solenoid and R2 relay coil.
 - 115 VAC is also sent from the door switch through the now closed contacts of the R1 relay to the fan motor.
 - The fan motor turns ON, and comes up to speed.
 - The fan prover switch makes allowing 115 VAC to the normally open R2 contacts.

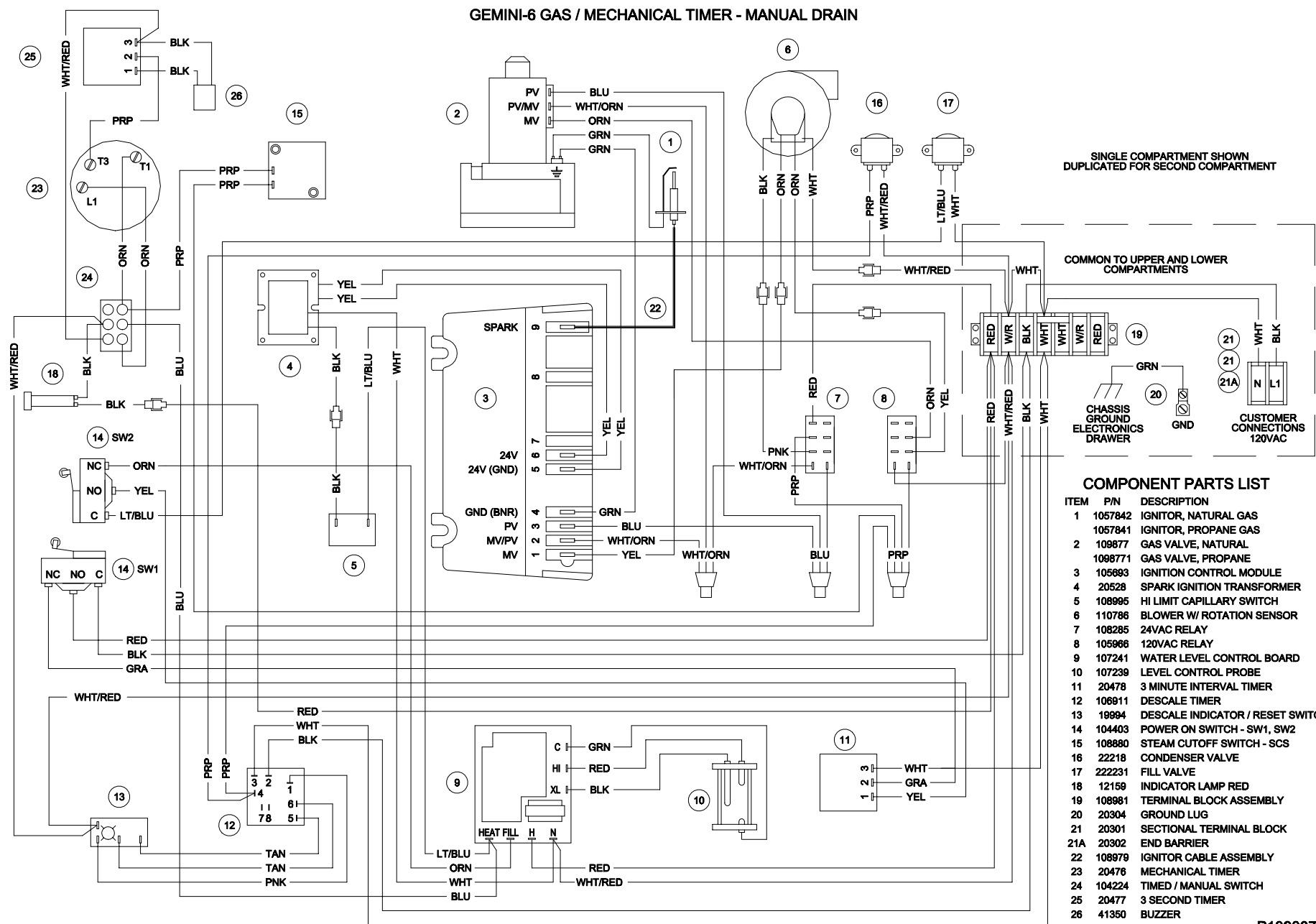
- The normally open R2 contacts close and 24 VAC is sent to the main coil of the gas valve.
 - The main burner is ignited.
6. When the mechanical timer times out or the unit is switched to the timed mode (with no time on the timer) from the manual mode, 115 VAC is sent to the 3-second timer and then to the buzzer for 3 seconds.
 7. Whenever the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
 8. When the on/off lever is turned off :
 - The drain is mechanically opened, and the generator begins to drain.
 - The red “115 VAC On” indicator light is de-energized.
 - 115 VAC is sent to the 3-minute timer and the fill solenoid is energized for 3 minutes flushing the drain.

GEMINI-6 GAS - MECHANICAL TIMER / MANUAL DRAIN



SINGLE COMPARTMENT SHOWN
DUPLICATED FOR SECOND COMPARTMENT

GEMINI-6 GAS / MECHANICAL TIMER - MANUAL DRAIN





SteamCraft® Gemini™ 10

TWO COMPARTMENT FLOOR MODEL DESIGN

PRESSURELESS CONVECTION STEAMER

TWIN, INDEPENDENT GAS-FIRED GENERATORS

Cleveland Standard Features

- Cooking Capacity for up to ten 12" x 20" x 2 1/2" deep Cafeteria Pans, five each compartment.
- Totally independent cooking compartments, each has its own generator, gas valve and water level controls - no shared components
- Exclusive High Efficiency Gas Power Burner (forced air) Generator: Produces more steam for faster cooking while lowering operating costs (72M BTU's per compartment)
- Easy Access Cleaning Port: Each generator has a deliming port located on the outside, top of the unit
- Generator Cleaning Light for each compartment warns the operator to delime generator
- Instant Steam Standby Mode: Holds generator at a steaming temperature, allows unit to start cooking instantly
- Each compartment has one, 60-Minute Electro-Mechanical Timer with load compensating feature. Manual Bypass Switch for constant steaming.
- Durable 14 Gauge, 304 Stainless Steel construction for compartment door, cooking cavity and steam generator
- Exclusive Two-Piece Compartment door: Slammable, self-adjusting door provides and airtight seal, reversible door gasket for extended life
- Exclusive Gemini Drain/Power Control System: Simple, reliable 1/2" ball valve style drain automatically turns power ON/OFF
- Exclusive Brass Steam Jets distribute even-high velocity steam throughout cooking compartment for faster cooking times
- Easy, Front -Access Generator Controls comes with a pullout drawer for simple servicing of unit
- 6" Stainless Steel Adjustable Legs with Flanged Feet
- Approvals: CSA (AGA, CSA) and U.L./NSF#4
- Compartment Steam Shut-Off Switch (SCS)

Options & Accessories

- ☐ Electronic Timer with Compensating Feature (ETC)
- ☐ On/Off Steam Switch Controls, no timer (MC)

MODEL: ☐ 24-CGA-10.2

ITEM NUMBER _____

JOB NAME / NUMBER _____

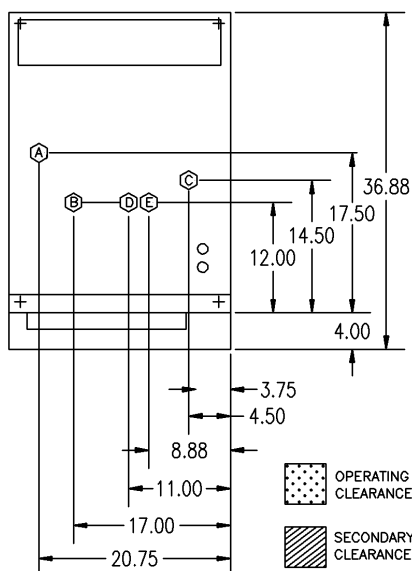


Short Form Specifications

Shall be Two Compartments, Cleveland Convection Steamer series **SteamCraft® Gemini™ 10**, Model 24-CGA-10.2, Twin Gas Atmospheric Steam Generator, 72M BTU's input per compartment. Independent steam generator, gas valve and water level control system. Automatic Generator Blowdown. Steam Generator with Automatic Water Fill on start up. Exclusive remote probe-type water level controls. Exclusive Brass "Steam Jet" distribution system. Two-piece free-floating compartment door. Type 430 Stainless Steel exterior and cooking compartments. Pullout service drawer for controls and Gemini Drain/Power Control System. Exclusive Cold Water Condenser design. Choice of Compartment Controls. Manual

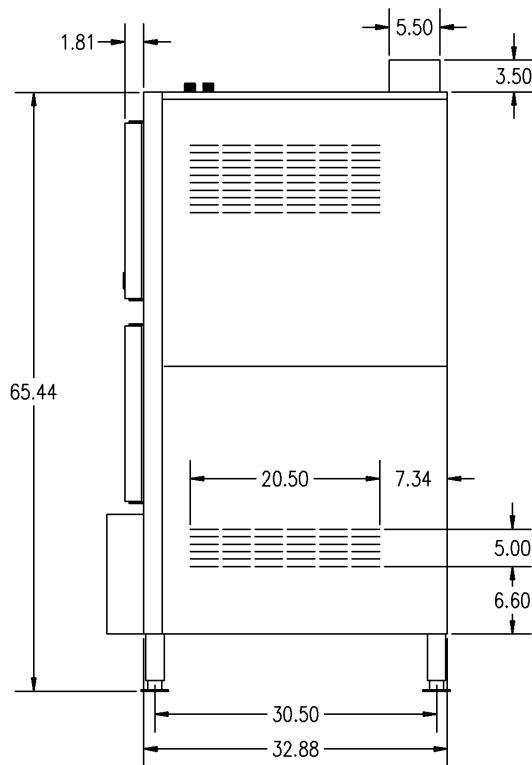
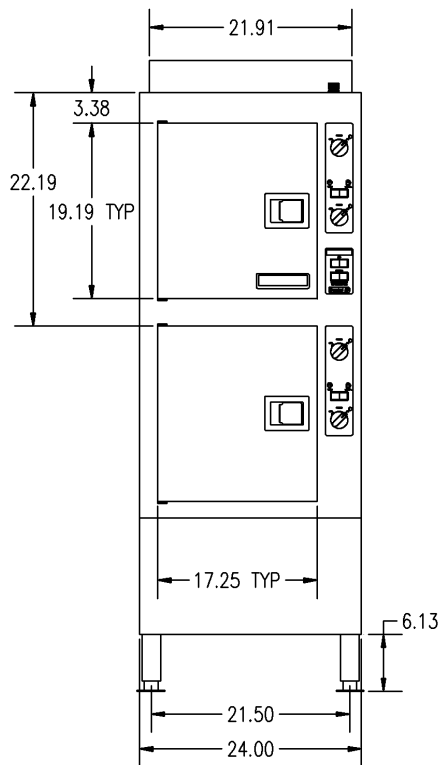
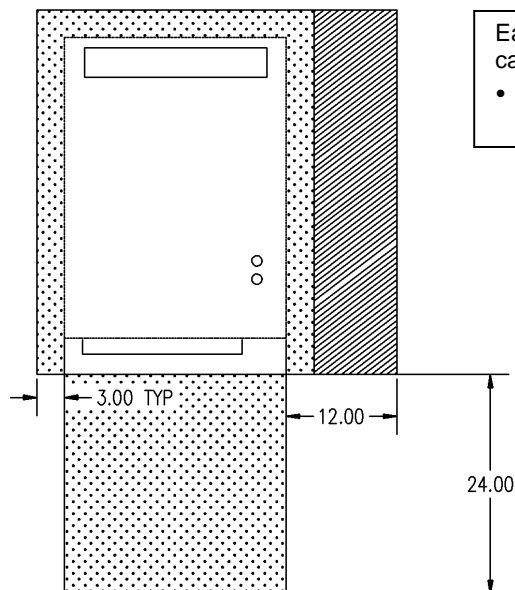
- ☐ Propane Gas (PG)
- ☐ Dissolve® Descale Solution, 6 one gallon container w/quart markings (106174)
- ☐ Water Filters

SECT. **IV** PAGE **13**
0402



Each Compartment has capacity for:

- Five, 12" x 20" x 2½" deep Cafeteria Pans.



WATER QUALITY REQUIREMENTS

The quality of water varies greatly from region to region. Steam equipment generators must be drained daily and chemically descaled periodically to ensure proper operation. To minimize service problems caused by the accumulation of minerals and chemicals in water review the following quality guidelines with a local water treatment specialist. Inlet water that is beyond these specified guidelines should be treated to achieve these acceptable limits. Total Dissolved Solids less than 60 ppm, Alkalinity less than 20 ppm, Silica less than 13 ppm, pH factor greater than 7.5, Chlorine less than 30 ppm.

A GAS			B ELECTRIC	C COLD WATER	CLEARANCE	D DRAINAGE
1½" IPS line size, ¾" (13mm) connection			120V-1Phase, 60 Hz.	35 psi minimum	Right - 3", Left - 3", Rear - 3"	1½" dia.
NATURAL	PROPANE	BTU	2 Blowers & Controls	60 psi maximum	(12" on control side if adjoining wall or equipment is over 30" high for service access)	Do not connect other units to this drain
Piping ¾" N.P.T.	Piping ¾" N.P.T.	72,000 each	150 watts each	One (E) 1/4" dia. NPT for Generator	Contact factory for variances to clearances.	Drain must be vented
Supply pressure 4.50" W.C. Min.	Supply pressure 11.00" W.C. Min.	Generator, 144,000 total		One (D) 1/4" dia NPT for Condenser		Do not use PVC pipe
14.00" W.C. Max.	14.00" W.C. Max.					
Manufacturer must be notified if unit will be used above 2,000 feet						

NOTES:

Cleveland Range reserves right of design improvement or modification, as warranted.
Many regional, state and local codes exist and it is the responsibility of the owner and installer to comply with the codes.
Cleveland Range equipment is built to comply with applicable standards for manufacturers. Included among those approval agencies are UL/NSF#4 and CSA (AGA, CGA).

(NOT TO SCALE)
SECT. **IV** PAGE **14**
0402
Litho in U.S.A.

CLEVELAND RANGE 24CGA10.2 SEQUENCE OF OPERATIONS

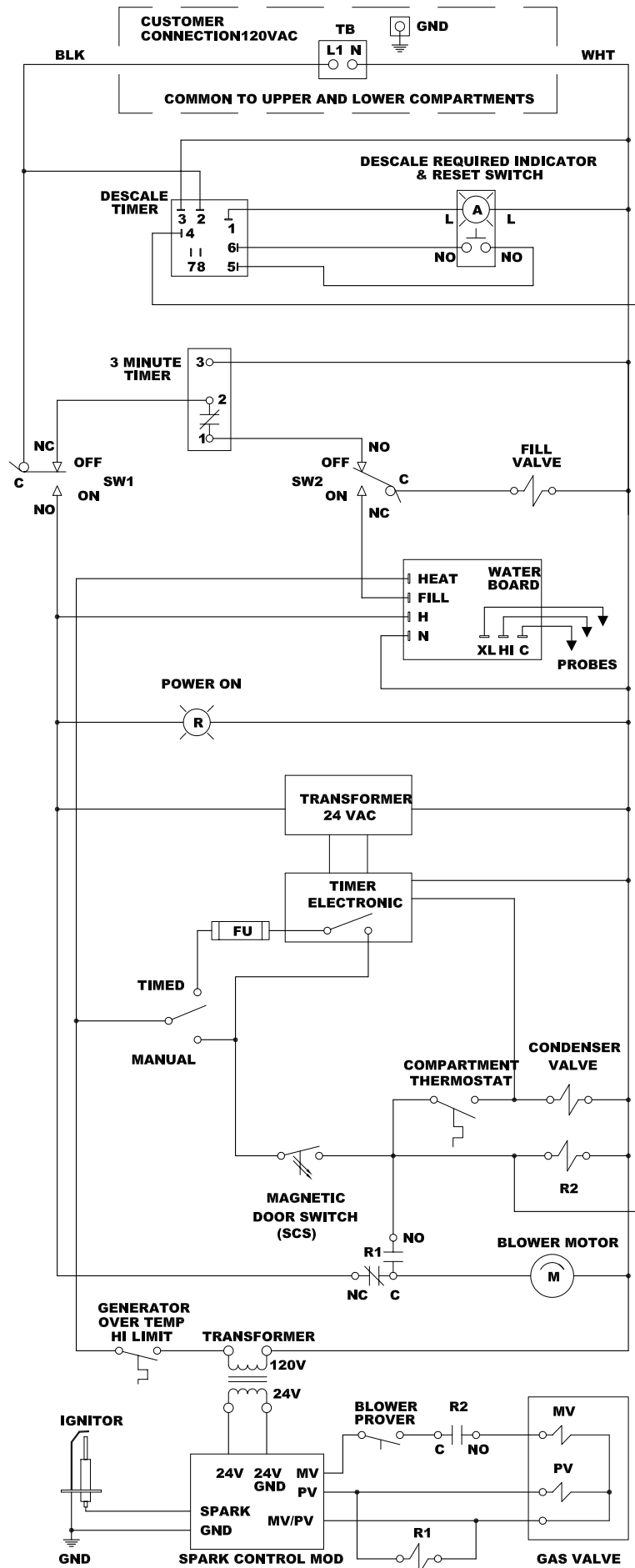
Mechanical Timer

Starting with the timed manual switch in the timed position, and no time on the timer.

1. To turn the unit on, turn the ON/OFF lever clockwise to the ON position
 - This mechanically closes the drain.
 - The red “Power On” indicator is energized.
 - 115 VAC is sent through the timer to the three-second timer, which activates the buzzer for three seconds.
 - 115 VAC is sent through the normally closed R1 contacts to the fan motor, turning it ON
 - 115 VAC is sent to H and N of the water level board
2. With the water level board energized and no water in the generator
 - 115 VAC is sent from the FILL terminal to the fill solenoid.
 - The fill solenoid opens and the generator fills.
3. The water fills to the low probe shorting it to ground
 - 115 VAC is sent from the HEAT terminal to the timed manual switch.
 - 115 VAC is sent through the high limit to the primary of the 24VAC transformer.
 - The water continues to fill until the water level reaches the high probe then 115 VAC is removed from the FILL terminal and the fill solenoid is turned off
4. 24VAC is sent to the ignition module.
 - Spark is sent to the igniter.
 - 24VAC is sent to the pilot coil of the gas valve and the coil of the R1 relay.
 - The normally closed R1 contacts open, turning off the fan
 - The pilot lights, which acts as a standby heater. When the pilot is ignited and the module detects 1.0 micro amps DC, the MV terminal on the module is energized it remains in this standby heat mode until a cooking compartment is turned “ON” (see step 5).
5. When the timed/manual switch is in the timed position and time is on the timer or the timed manual switch is set to the manual position:
 - 115 VAC is sent to the clean light timer.
 - When the clean light timer times down 115 VAC is sent to the clean light switch.
 - When the clean light switch is depressed the timer is reset.
 - 115 VAC is sent from the compartment timer through the door switch to the normally closed contacts of the compartment thermostat and R2 relay coil.
 - The “Sure Cook” light is energized.
 - 115 VAC is also sent from the door switch through the now closed contacts of the R1 relay to the fan motor.
 - The fan motor turns ON, and comes up to speed.

- The fan prover switch makes allowing 24 VAC to the normally open R2 contacts.
 - The normally open R2 contacts close and 24 VAC is sent to the main coil of the gas valve.
 - The main burner is ignited and the water heated to steam.
 - Steam enters the cabinet and the compartment thermostat closes at 193 degrees.
 - The “Sure Cook” light is de-energized.
 - If in the timed mode, 115 VAC is sent to the timer motor and the timer begins counting down.
 - The condensate solenoid is energized sending cold water down condensate spray nozzle pulling the steam around the product and down the drain.
6. When the timer times out or the unit is switched to the timed mode (with no time on the timer) from the manual mode, 115 VAC is sent to the 3 second timer and then to the buzzer for 3 seconds.
7. Whenever the water level drops below the high probe for 5 seconds 115 VAC is sent to the FILL terminal again.
8. When the on/off lever is turned off :
- The drain is mechanically opened, and the generator begins to drain.
 - The red “Power On” indicator light is de-energized.
 - 115 VAC is sent to the 3-minute timer and the fill solenoid is energized for 3 minutes flushing the drain.

GEMINI 10 GAS - ELECTRONIC TIMER

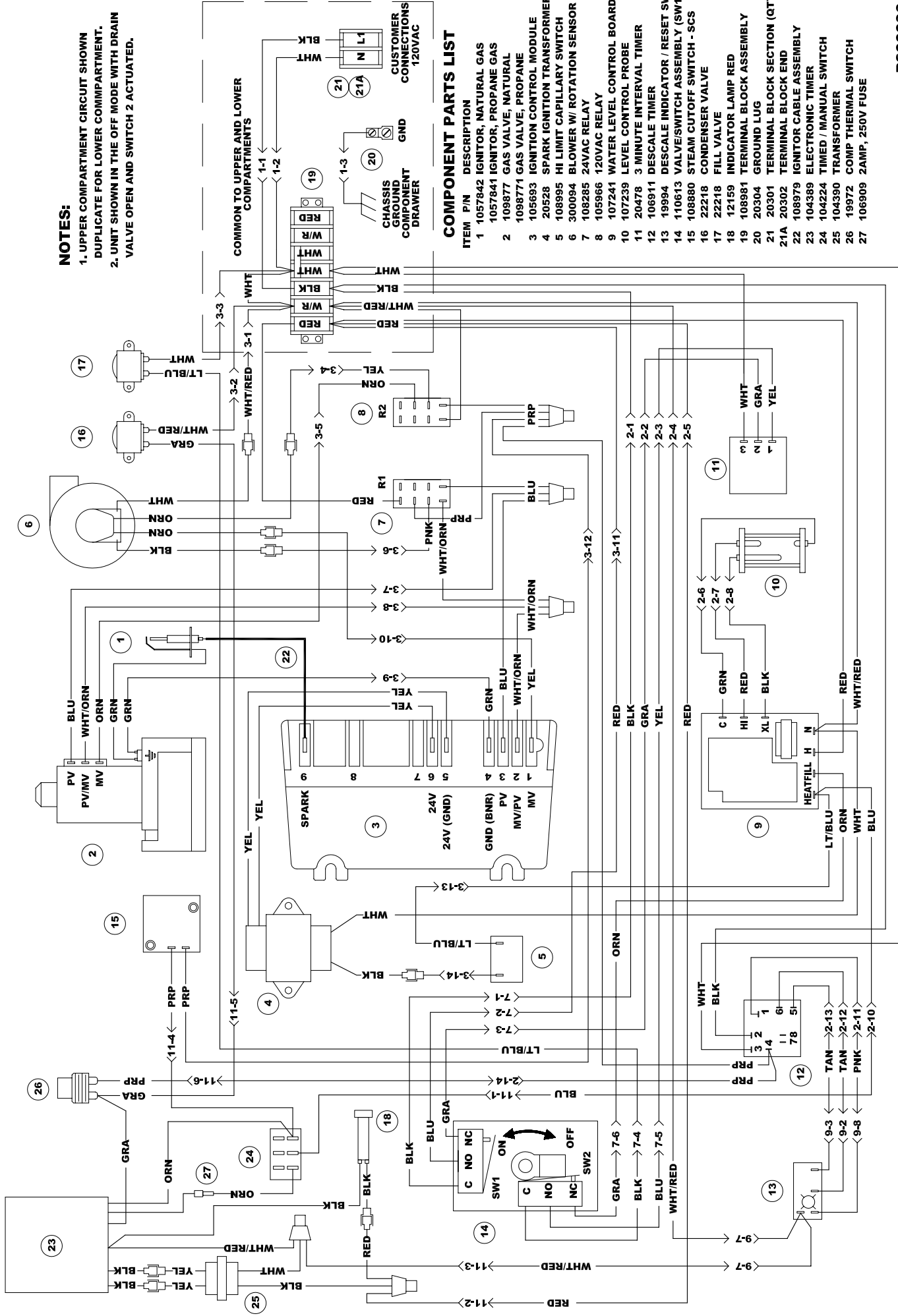


SINGLE COMPARTMENT SHOWN
 DUPLICATE FOR SECOND COMPARTMENT

GEMINI 10 GAS / ELECTRONIC TIMER

NOTES:

1. UPPER COMPARTMENT CIRCUIT SHOWN
DUPLICATE FOR LOWER COMPARTMENT.
- UNIT SHOWN IN THE OFF POSITION WITH DRAIN
VALVE OPEN AND SWITCH 2 ACTUATED.

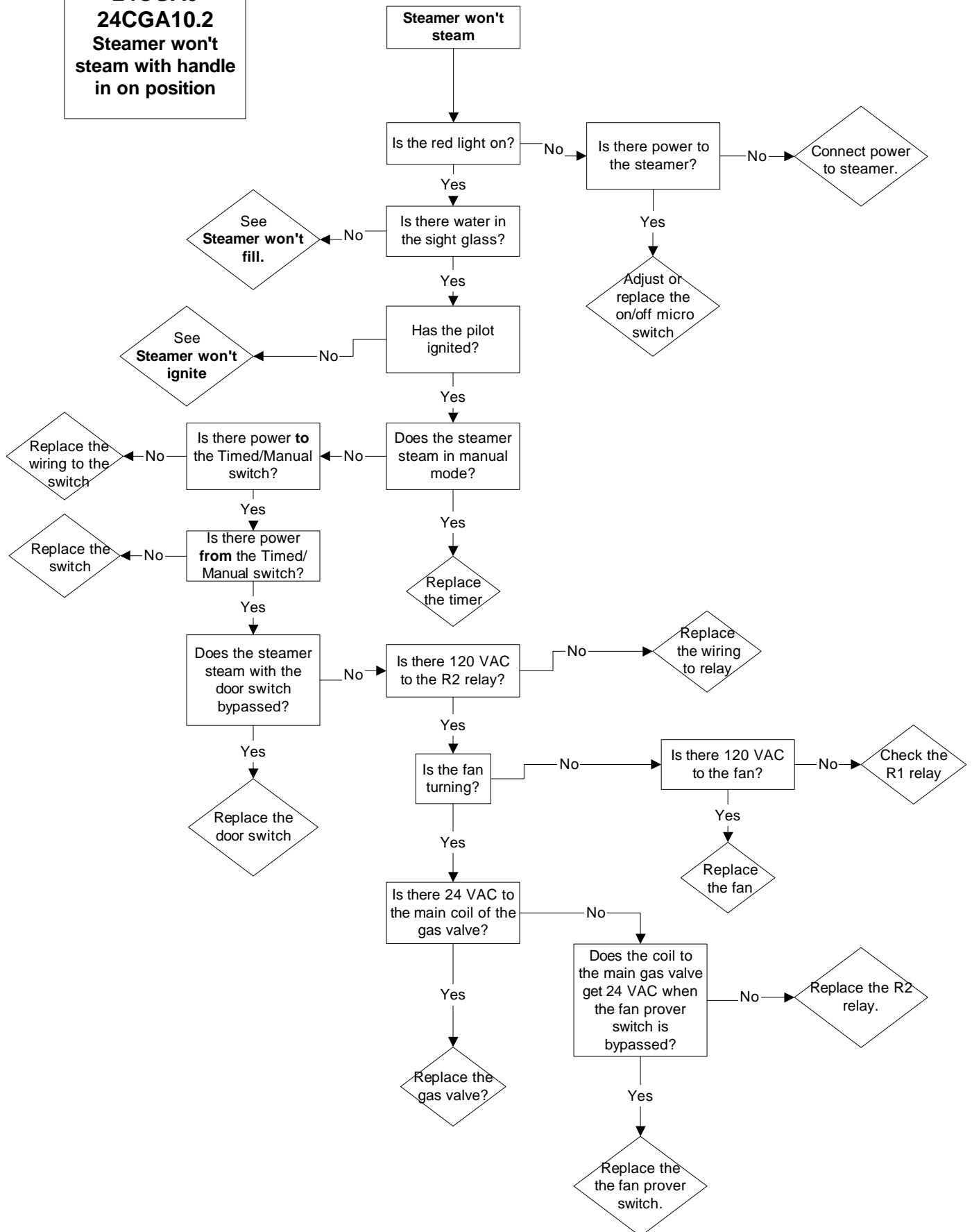


COMPONENT PARTS LIST

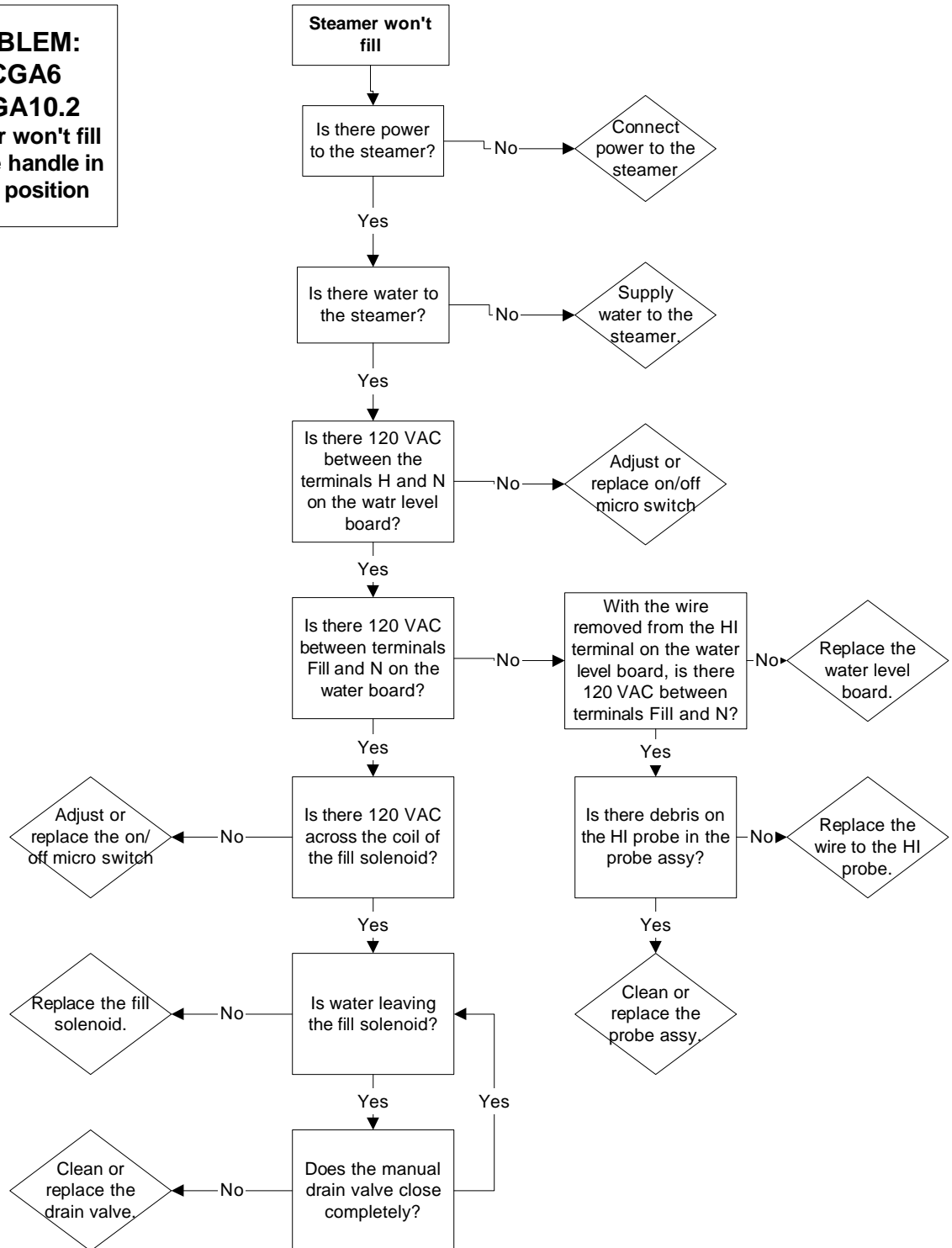
ITEM	P/N	DESCRIPTION
1	1057842	IGNITOR, NATURAL GAS
2	1057841	IGNITOR, PROPANE GAS
3	109877	GAS VALVE, NATURAL
4	1098771	GAS VALVE, PROPANE
5	105693	IGNITION CONTROL MODULE
6	20528	SPARK IGNITION TRANSFORMER
7	108995	HI LIMIT CAPILLARY SWITCH
8	300094	BLOWER W/ ROTATION SENSOR
9	108285	24VAC RELAY
10	105966	120VAC RELAY
11	107241	WATER LEVEL CONTROL BOARD
12	107239	LEVEL CONTROL PROBE
13	20478	3 MINUTE INTERVAL TIMER
14	106911	DESCALE TIMER
15	19994	DESCALE INDICATOR / RESET SWITCH
16	110613	VALVE/SWITCH ASSEMBLY (SW1 & SW2)
17	108880	STEAM CUTOFF SWITCH - SCS
18	22218	CONDENSER VALVE
19	22218	FILL VALVE
20	108981	INDICATOR LAMP RED
21	12159	TERMINAL BLOCK ASSEMBLY
22	20304	GROUND LUG
23	20301	TERMINAL BLOCK SECTION (QTY. 2)
24	20302	TERMINAL BLOCK END
25	108979	IGNITOR CABLE ASSEMBLY
26	104389	ELECTRONIC TIMER
27	104224	TIMED / MANUAL SWITCH
28	104390	TRANSFORMER
29	19972	COMP THERMAL SWITCH
30	106909	2AMP, 250V FUSE

P300096 A

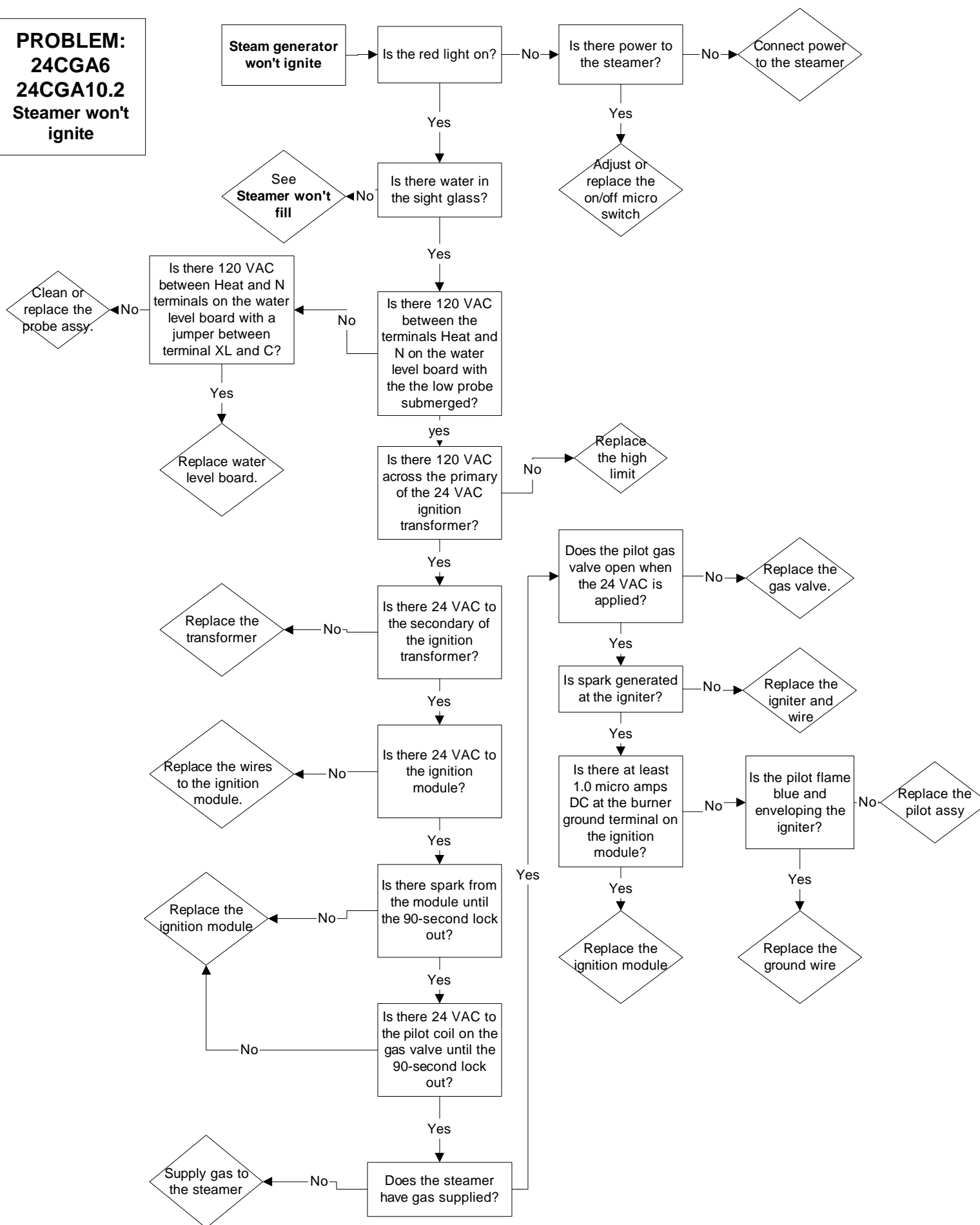
PROBLEM:
24CGA6
24CGA10.2
 Steamer won't
 steam with handle
 in on position



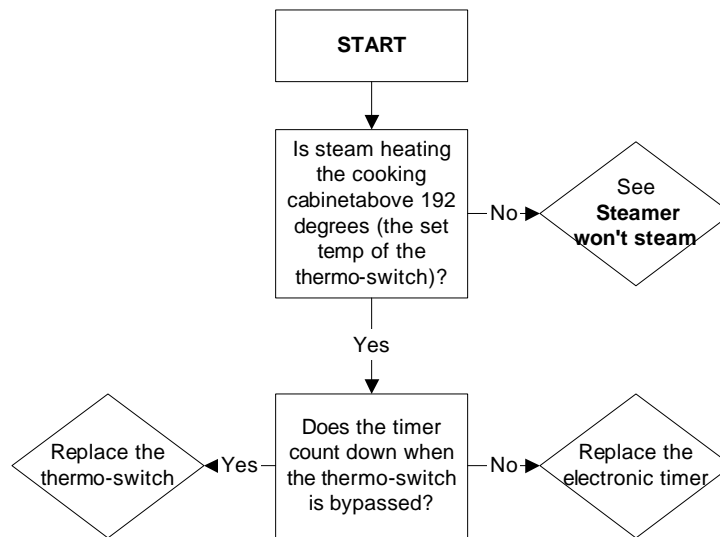
PROBLEM:
24CGA6
24CGA10.2
Steamer won't fill
with the handle in
the on position



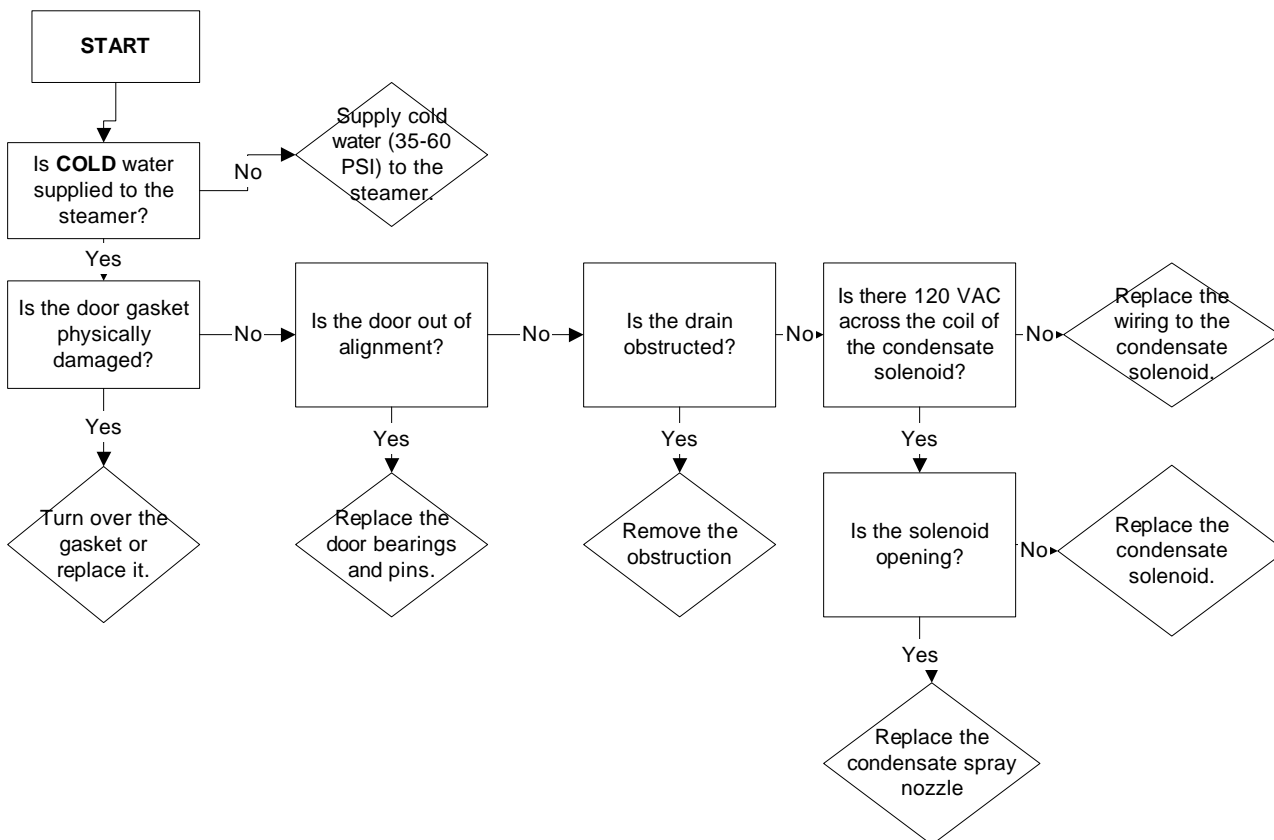
PROBLEM:
24CGA6
24CGA10.2
Steamer won't ignite



PROBLEM:
24CGA6, 24CGA10.2
Electronic timer displays "PAUS" and won't count down



PROBLEM:
24CGA6, 24CGA10.2
Steam leaks around the door.

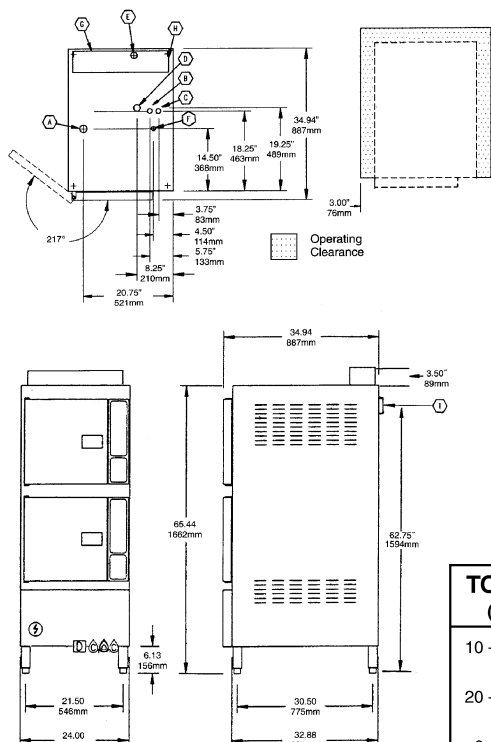




Convection Steamers

SteamCraft® Power 10

TWO COMPARTMENT FLOOR MODEL DESIGN
GAS-FIRED STEAM GENERATOR, 240 M BTU
24" WIDE MODULAR DESIGN



TOTAL CAPACITY (2 Compartments)

- 10 — 12" x 20" x 2 1/2" Cafeteria Pans or
- 20 — 12" x 20" x 1" Cafeteria Pans or
- 6 — 12" x 20" x 4" Cafeteria Pans

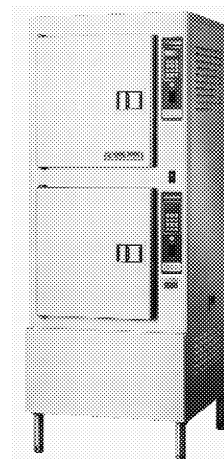
UTILITY CONNECTIONS

- (A) Electrical Supply
- (B) Cold Water Supply for Condenser 3/8" Dia. IPS
- (C) Cold Water Supply for Generator and Water Injection. 3/8" Dia. IPS (for water treatment conn.) Unit comes with a 50 Mesh Water Strainer (installation required)
- (D) Drain: 1.50" (38mm) Dia.
- (E) Inlet for Generator Deliming Solution
- (F) Gas Supply .75" (13mm) Dia.
- (G) Flue Gas Exhaust from Boiler
- (H) Flue Diverter
- (I) Power Take Off Connection

MODEL: ☐ 24-CGP-10

ITEM NUMBER _____

JOB NAME / NUMBER _____



Shown with optional
Electronic Timer

SHORT FORM SPECIFICATION

Shall be CLEVELAND, SteamCraft® Power 10, two compartments, Floor Model Steamer, Model 24-CGP-10. Single, large capacity Gas-fired Pressure Steam Generator, 240M BTU input. Patented Automatic Water Level Float design. Steam Generator with Automatic Water Fill on start up, Automatic Generator Blowdown, Electronic Spark Ignition and Generator Standby for instant steam. Choice of Compartment Controls, Manual By Pass Operation Mode. Patented Cold Water Condenser design.

WATER QUALITY REQUIREMENT

The quality of water varies greatly from region to region. *Steam equipment must be blown down daily and chemically descaled periodically to ensure proper operation.* To minimize service problems caused by the accumulation of minerals and chemicals in water, review the following quality guidelines with a local water treatment specialist. Inlet water that is beyond these specified guidelines should be treated to achieve the acceptable limits.

TOTAL DISSOLVED SOLIDS	less than 60 parts per million
TOTAL ALKALINITY	less than 20 parts per million
SILICA	less than 13 parts per million
pH FACTOR	greater than 7.5
CHLORINE	less than 30 parts per million

A typical water quality analysis can be secured from your local water district. Water that is potable does not guarantee compatibility with steam equipment.

GAS	ELECTRIC	COLD WATER	DRAINAGE	CLEARANCE
240,000 BTU - Piping 1 1/4" IPS Line Size, 3/4" Connection	115V - 1 Phase	35 psi minimum 60 psi maximum	1 1/2" Dia.	Right - 6.00"
SUPPLY PRESSURE		1 Fan & Controls - 150 Watts	Do not connect other units to this drain.	Left - 3.00"
NATURAL		1/2" Dia. IPS for Generator (for SteamerGuard connection)	Drain line must be vented.	Rear - 3.00"
PROpane		3/4" Dia. IPS for Condenser	No PVC pipe for drain.	
Manufacturer must be notified if unit will be used above 2,000 ft. altitude.				

Cleveland Range reserves right of design improvement or modification, as warranted.

Cleveland Range, LLC

Ph: 1-216-481-4900 Fx: 1-216-481-3782

1333 East 179th St., Cleveland, Ohio, U.S.A. 44110

Visit our Web Site at www.clevelandrange.com

CLEVELAND RANGE
SEQUENCE OF OPERATIONS
24CGP10
Mechanical Timer

1. To turn the unit on, depress the red on/off rocker switch.
 - 115 VAC is sent to normally open drain valve closing it.
 - 115 VAC is sent to the Timed/Manual switches for the cabinets.
 - 115 VAC is sent to L1 and L2 of the water level board.
2. With the water level board energized and no water in the boiler
 - 115 VAC is sent from the IND terminal to the low water indicator light on the console.
 - 115 VAC is sent from the WF terminal to the fill solenoid after a 5-second delay.
 - The fill solenoid opens and the boiler fills.
 - The water fills to the secondary low water cutoff probe in the boiler, shorting it to ground
 - 115 VAC is removed from the IND terminal and the low water indicator light is de-energized.
 - 115 VAC is sent from the HTR terminal through the normally closed contact of the high-pressure switch to the normally open contacts of the amber reset switch,
 - 115 VAC is sent through the normally closed R1 contacts to energize the amber light on the reset switch.
 - If the low water cut off probe is not grounded for 20 seconds, 115 VAC is removed from HTR and sent back to IND energizing the low water light.
3. When the momentary amber switch is depressed 115 VAC is sent to the R1 relay closing it.
 - The normally closed R1 contacts open de-energizing the amber light.
 - The relay latches through the normally closed contacts of R1
 - If either the high-pressure switch (set at 15 PSI) or the low probe circuit on the water level board opens, then the latch circuit opens.
 - When the water level or pressure returns to a safe condition the amber light will energize and the process may begin again.
4. The R1 relay contacts close sending 115 VAC through the normally closed operating pressure switch to the primary coil of the 24 VAC transformer.

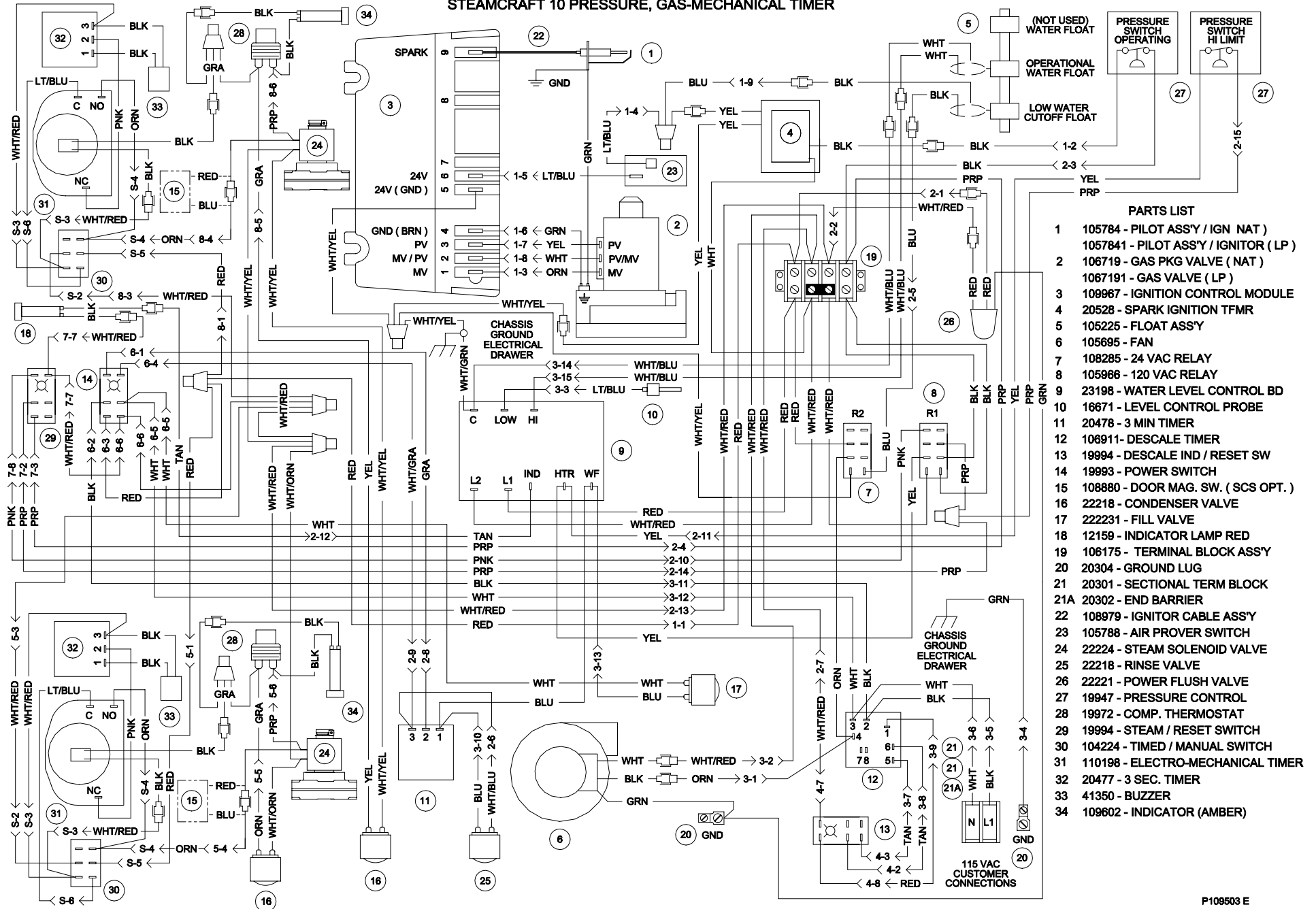
- 24VAC is sent from the secondary of the 24 VAC transformer through the low water cutoff float switch to the R2 relay coil.
 - The normally open R2 contacts close and send 115 VAC to the fan.
 - The fan turns and the air prover switch is closed.
 - 24 VAC is sent through the air prover switch to the ignition module.
 - With 24 VAC to the ignition module a spark is generated at the igniter.
 - 24VAC is sent to the pilot coil on the gas valve.
 - The pilot valve is energized and opens.
 - Gas is sent to the pilot burner.
 - The gas is ignited and the flame rectifies the AC current.
 - When the ignition module reads at least 1.0 micro amps DC current through the ground wire the coil to the main gas valve is energized
 - The pilot flame lights the main burner.
 - If the module does not read 1.0 micro amps DC in 90 seconds it will shut down the main burner and make one more try before locking out.
5. The water in the boiler is heated to steam.
 - As steam is generated and pressure builds the air is pushed out through the steamtrap on the lower steam manifold.
 - Steam goes through the steam trap heating it to 192 degrees closing the steam trap.
 6. Pressure builds in the boiler to the set point of 8-10 PSI.
 - The operating pressure switch opens and the heat circuit is de-energized.
 7. With the timed/manual switch in the timed position and time on the timer.
 - 115 VAC is sent to the steam solenoid and steam is sent to the cooking cabinet. There the steam is directed around the product
 - 115 VAC is sent to the normally open contacts of the compartment thermostat.
 - The normally open contact close when the thermostat reaches 193 degrees.
 - 115 VAC is sent to the timer motor and the timer begins to count down
 - 115 VAC is sent to the condensate solenoid and cold water is sent to the condensate spray nozzle pulling the steam down the drain..

- When the steam pressure drops below the operating set point the heat circuit is energized and the heat process begins again.
8. Water continues to fill the boiler until the operational water float is lifted and closes, shorting the HI terminal on the water level board to the C terminal. .
 - When the HI terminal is shorted to the C terminal the WF terminal on the water level board is de-energized.
 - If the water level drops and the operational water float switch opens for more than 5 seconds the WF terminal is energized and the water fill circuit begins again.
 9. When the mechanical timer counts down:
 - 115 VAC is removed from the condensate circuit.
 - 115 VAC is removed from the steam solenoid.
 - 115 VAC is sent to the 3-second timer
 - 115 VAC is sent from the 3-second timer to the buzzer for 3 seconds.
 10. With the timed/manual switch in the manual position
 - 115 VAC is sent to the steam solenoid and steam is sent to the cooking cabinet. There the steam is directed around the product
 - 115 VAC is sent to the normally open contacts of the compartment thermostat.
 - The normally open contact close when the thermostat reaches 193 degrees.
 - 115 VAC is sent to the condensate solenoid and cold water is sent to the condensate spray nozzle pulling the steam down the drain..
 - When the steam pressure drops below the operating set point the heat circuit is energized and the heat process begins again.
 11. The unit is turned off by depressing the red rocker switch.
 - 115 VAC is removed from the timing and heat circuits.
 - 115 VAC is removed from the normally open blowdown valve allowing the unit to drain.
 - 115 VAC is sent to the 3-minute timer.
 - The three-minute timer will energize the fill and rinse solenoids for 3 minutes while the steamer drains assisting and cooling the blowdown. .

GND



STEAMCRAFT 10 PRESSURE, GAS-MECHANICAL TIMER



PARTS LIST

- 1 105784 - PILOT ASSY / IGN NAT)
1057841 - PILOT ASSY / IGNITOR (LP)
- 2 106719 - GAS PKG VALVE (NAT)
1067191 - GAS VALVE (LP)
- 3 109967 - IGNITION CONTROL MODULE
- 4 20528 - SPARK IGNITION TFMR
- 5 105225 - FLOAT ASS'Y
- 6 105695 - FAN
- 7 108285 - 24 VAC RELAY
- 8 105966 - 120 VAC RELAY
- 9 23198 - WATER LEVEL CONTROL BD
- 10 16671 - LEVEL CONTROL PROBE
- 11 20478 - 3 MIN TIMER
- 12 106911- DESCALE TIMER
- 13 19994 - DESCALE IND / RESET SW
- 14 19993 - POWER SWITCH
- 15 108880 - DOOR MAG. SW. (SCS OPT.)
- 16 22218 - CONDENSER VALVE
- 17 222231 - FILL VALVE
- 18 12159 - INDICATOR LAMP RED
- 19 106175 - TERMINAL BLOCK ASS'Y
- 20 20304 - GROUND LUG
- 21 20301 - SECTIONAL TERM BLOCK
- 21A 20302 - END BARRIER
- 22 108979 - IGNITOR CABLE ASS'Y
- 23 105788 - AIR PROVER SWITCH
- 24 22224 - STEAM SOLENOID VALVE
- 25 22218 - RINSE VALVE
- 26 22221 - POWER FLUSH VALVE
- 27 19947 - PRESSURE CONTROL
- 28 19972 - COMP. THERMOSTAT
- 29 19994 - STEAM / RESET SWITCH
- 30 104224 - TIMED / MANUAL SWITCH
- 31 110198 - ELECTRO-MECHANICAL TIMER
- 32 20477 - 3 SEC. TIMER
- 33 41350 - BUZZER
- 34 109602 - INDICATOR (AMBER)

CLEVELAND RANGE
SEQUENCE OF OPERATIONS
24 CGP 10
Electronic Timer

1. To turn the unit on, depress the red on/off rocker switch.
 - 115 VAC is sent to normally open blowdown valve closing it.
 - 115 VAC is sent to the 24 VAC transformer to the timer.
 - 24 VAC is sent to the timer.
 - 115 VAC is sent to the Timed/Manual switches for the cabinets.
 - 115 VAC is sent to L1 and L2 of the water level board.
2. With the water level board energized and no water in the boiler
 - 115 VAC is sent from the IND terminal to the low water indicator light on the console.
 - 115 VAC is sent from the WF terminal to the fill solenoid after a 5-second delay.
 - The fill solenoid opens and the boiler fills.
 - The water fills to the secondary low water cutoff probe in the boiler, shorting it to ground
 - 115 VAC is removed from the IND terminal and the low water indicator light is de-energized.
 - 115 VAC is sent from the HTR terminal through the normally closed contact of the high-pressure switch to the normally open contacts of the amber reset switch,
 - 115 VAC is sent through the normally closed R1 contacts to energize the amber light on the reset switch.
 - If the low water cut off probe is not grounded for 20 seconds, 115 VAC is removed from HTR and sent back to IND energizing the low water light.
3. When the momentary amber switch is depressed 115 VAC is sent to the R1 relay closing it.
 - The normally closed R1 contacts open de-energizing the amber light.
 - The relay latches through the normally closed contacts of R1
 - If either the high-pressure switch (set at 15 PSI) or the low probe circuit on the water level board opens, then the latch circuit opens.
 - When the water level or pressure returns to a safe condition the amber light will energize and the process may begin again.
4. The R1 relay contacts close sending 115 VAC through the normally closed operating pressure switch to the 24 VAC transformer.
 - 24VAC is sent through the low water cutoff float switch to the R2 relay coil.
 - The normally open R2 contacts close and send 115 VAC to the fan.
 - The fan turns and the air prover switch is closed.
 - 24 VAC is sent through the air prover switch to the ignition module.
 - With 24 VAC to the ignition module 24VAC is sent to the pilot coil on the gas valve.
 - A spark is generated at the igniter.

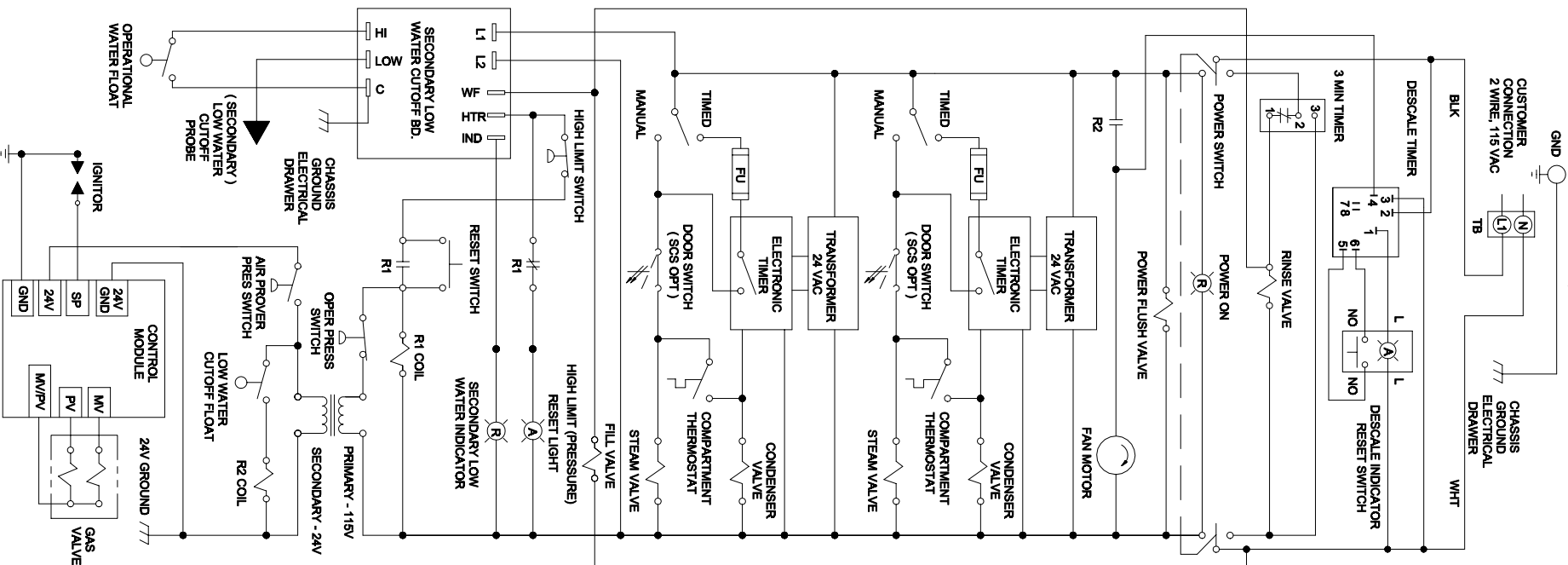
- The pilot valve is energized and opens.
 - Gas is sent to the pilot burner.
 - The gas is ignited and the flame rectifies the AC current.
 - When the ignition module reads at least 1.0 micro amps DC current through the ground wire the coil to the main gas valve is energized
 - The pilot flame lights the main burner.
 - If the module does not read 1.0 micro amps DC in 90 seconds it will shut down the main burner and make one more try before locking out.
5. The water in the boiler is heated to steam.
 - As steam is generated and pressure builds the air is pushed out through the steamtrap on the lower steam manifold.
 - Steam goes through the steam trap heating it to 192 degrees closing the steam trap.
 6. Pressure builds in the boiler to the set point of 8-10 PSI.
 - The operating pressure switch opens and the heat circuit is de-energized.
 7. With the timed/manual switch in the timed position (with time on the timer) or in the manual position:
 - The timer display alternates between “PAUS” and the time set.
 - 115 VAC is sent to the steam solenoid and steam is sent to the cooking cabinet. There the steam is directed around the product.
 - When the cooking compartment reaches 193 degrees internally the thermal switch closes.
 - The timer begins to count down
 - 115 VAC is sent to the condensate solenoid. The condensate solenoid sends cold water to the condensate spray nozzle pulling the seam down the drain.
 - When the pressure drops below the set point the heat circuit is energized and the heat process begins again.
 8. Water continues to fill until the operational water float is lifted and closes, shorting the HI terminal on the water level board to the C terminal. .
 - When the HI terminal is shorted to the C terminal the WF terminal on the water level board is de-energized.
 - If the water level drops below the operational water float switch for more than 5 seconds the WF terminal is energized and the water fill circuit begins again.
 9. When the electronic timer counts down:
 - 115 VAC is removed from the condensate circuit.
 - 115 VAC is removed from the steam solenoid
 10. With the timed/manual switch in the manual position
 - 115 VAC is sent to the steam solenoid and steam is sent to the cooking cabinet. There the steam is directed around the product
 - 115 VAC is sent to the normally open contacts of the compartment thermostat.

- The normally open contact close when the thermostat reaches 193 degrees.
- 115 VAC is sent to the condensate solenoid and cold water is sent to the condensate spray nozzle pulling the steam down the drain..
- When the steam pressure drops below the operating set point the heat circuit is energized and the heat process begins again.

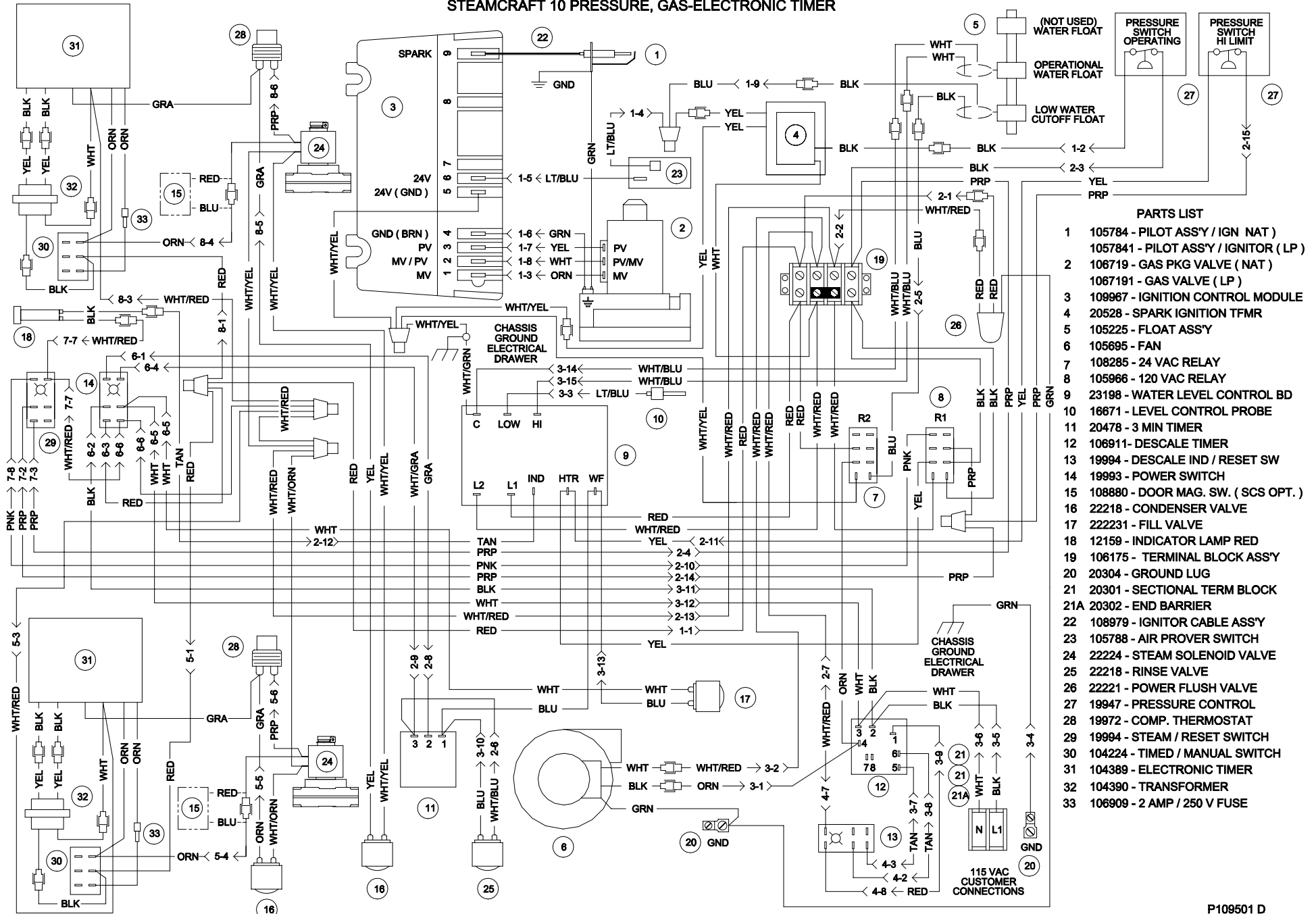
11. The unit is turned off by depressing the red rocker switch.

- 115 VAC is removed from the timing and heat circuits.
- 115 VAC is removed from the normally open blowdown valve allowing the unit to drain.
- 115 VAC is sent to the 3-minute timer.
 - The three-minute timer will energize the fill and rinse solenoids for 3 minutes while the steamer drains assisting and cooling the blowdown. .

STEAMCRAFT 10 PRESSURE, GAS - ELECTRONIC TIMER



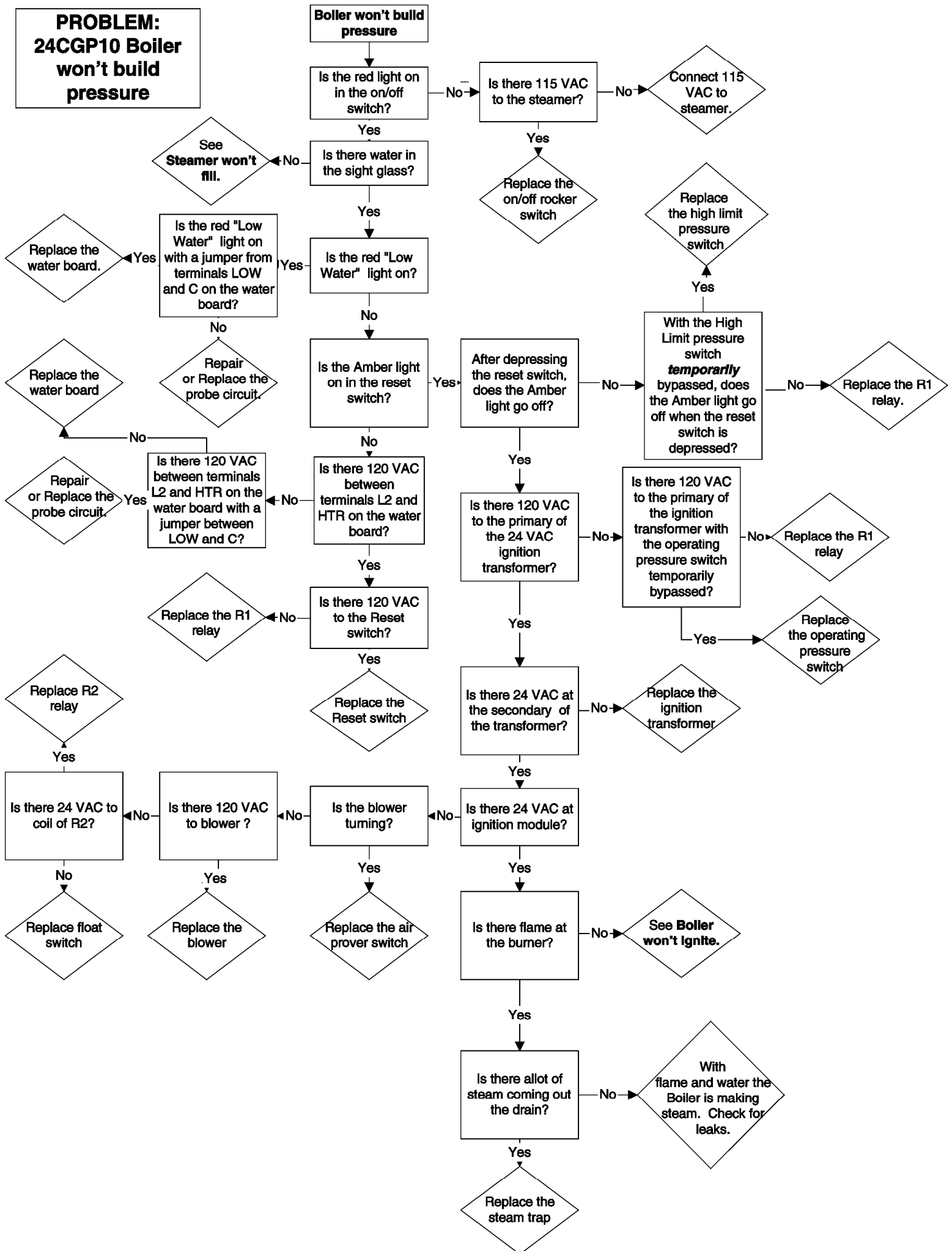
STEAMCRAFT 10 PRESSURE, GAS-ELECTRONIC TIMER



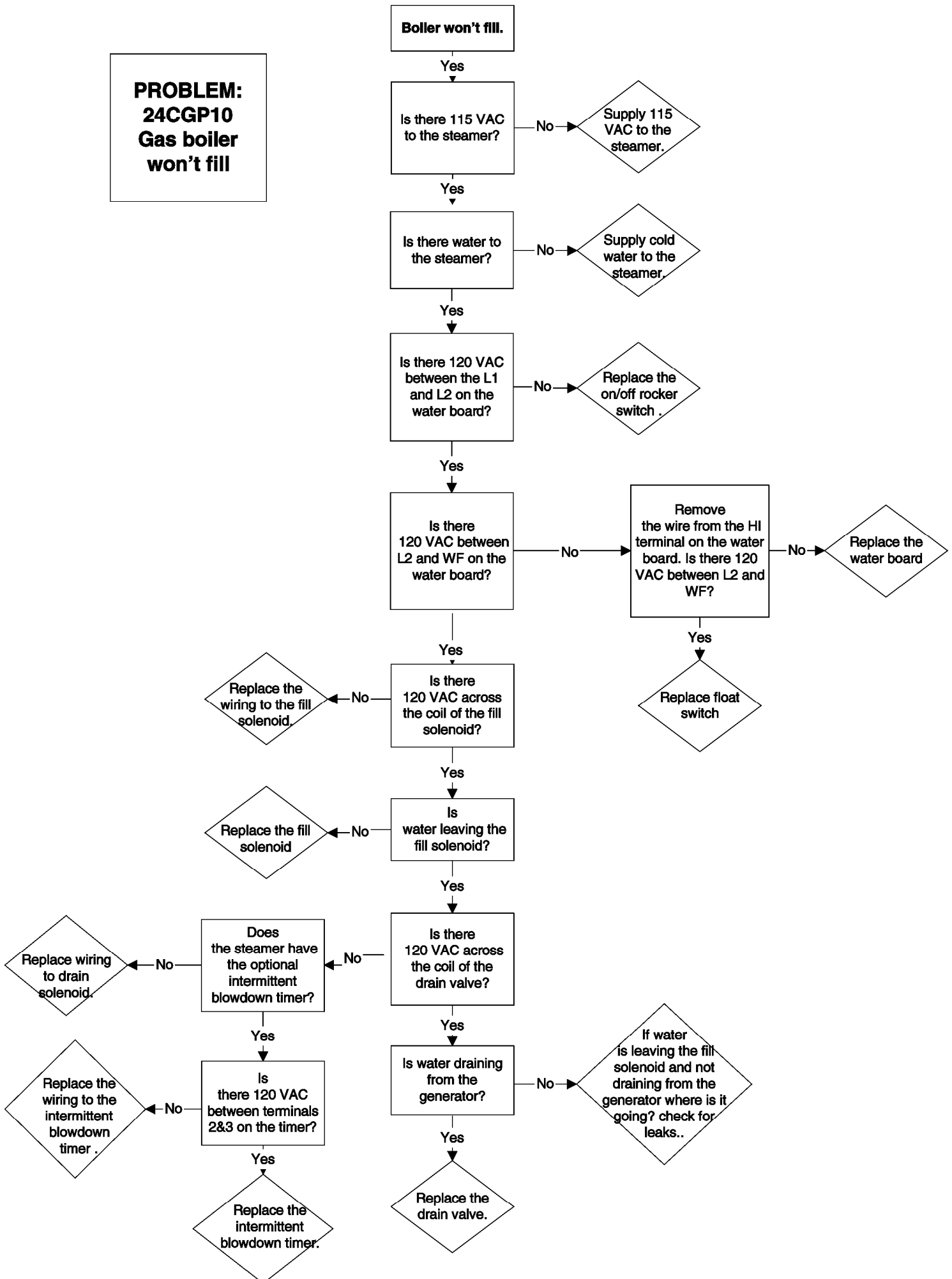
PARTS LIST

- 1 105784 - PILOT ASSY / IGN NAT
- 1057841 - PILOT ASSY / IGNITOR (LP)
- 2 106719 - GAS PKG VALVE (NAT)
- 1067191 - GAS VALVE (LP)
- 3 109967 - IGNITION CONTROL MODULE
- 4 20528 - SPARK IGNITION TFM
- 5 105225 - FLOAT ASSY
- 6 105695 - FAN
- 7 108285 - 24 VAC RELAY
- 8 105966 - 120 VAC RELAY
- 9 23198 - WATER LEVEL CONTROL BD
- 10 16671 - LEVEL CONTROL PROBE
- 11 20478 - 3 MIN TIMER
- 12 106911-DESCALE TIMER
- 13 19994 - DESCAL IND / RESET SW
- 14 19993 - POWER SWITCH
- 15 108880 - DOOR MAG. SW. (SCS OPT.)
- 16 22218 - CONDENSER VALVE
- 17 222231 - FILL VALVE
- 18 12159 - INDICATOR LAMP RED
- 19 106175 - TERMINAL BLOCK ASSY
- 20 20304 - GROUND LUG
- 21 20301 - SECTIONAL TERM BLOCK
- 21A 20302 - END BARRIER
- 22 108979 - IGNITOR CABLE ASSY
- 23 105788 - AIR PROVER SWITCH
- 24 22224 - STEAM SOLENOID VALVE
- 25 22218 - RINSE VALVE
- 26 22221 - POWER FLUSH VALVE
- 27 19947 - PRESSURE CONTROL
- 28 19972 - COMP. THERMOSTAT
- 29 19994 - STEAM / RESET SWITCH
- 30 104224 - TIMED / MANUAL SWITCH
- 31 104389 - ELECTRONIC TIMER
- 32 104390 - TRANSFORMER
- 33 106909 - 2 AMP / 250 V FUSE

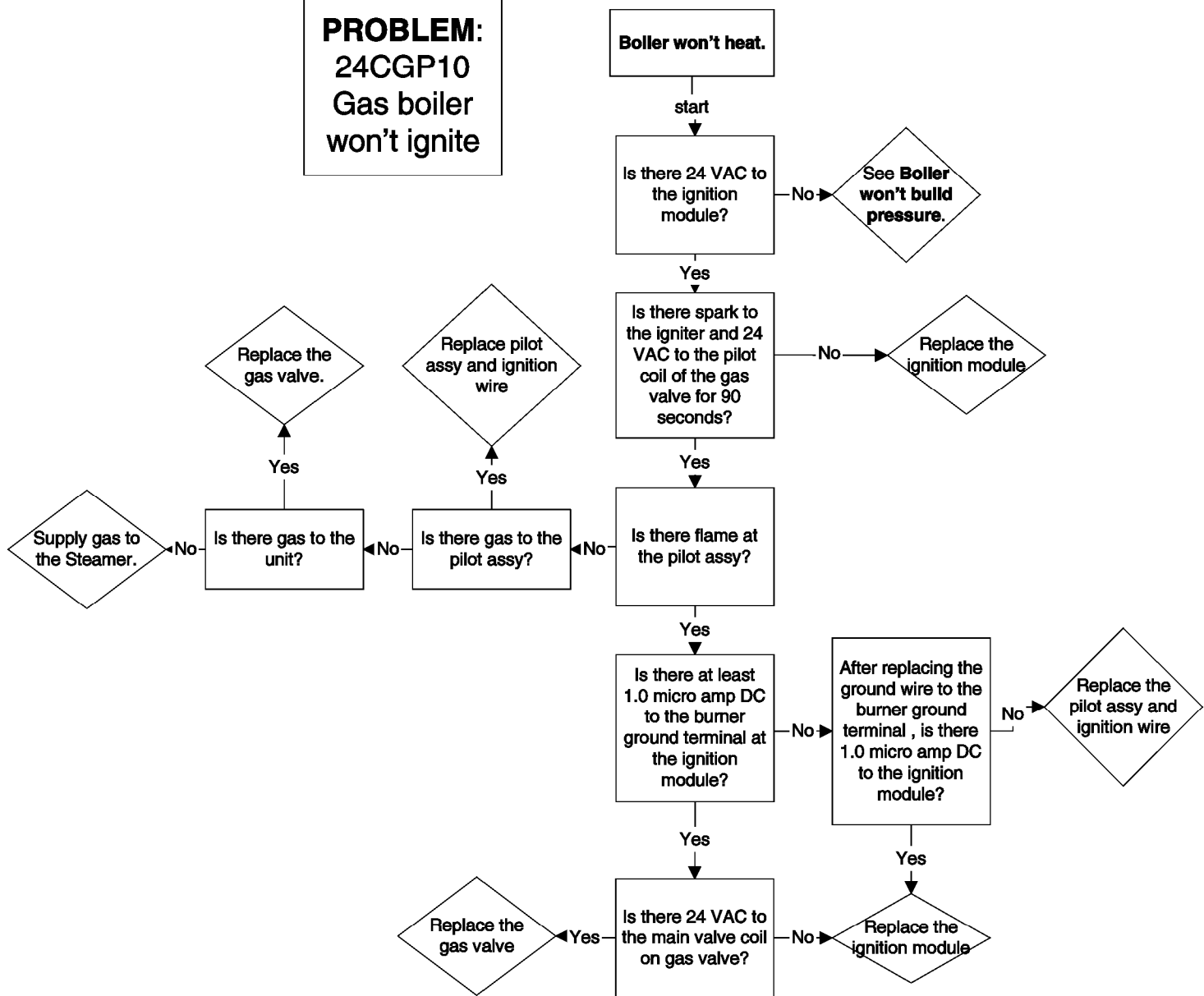
**PROBLEM:
24CGP10 Boiler
won't build
pressure**



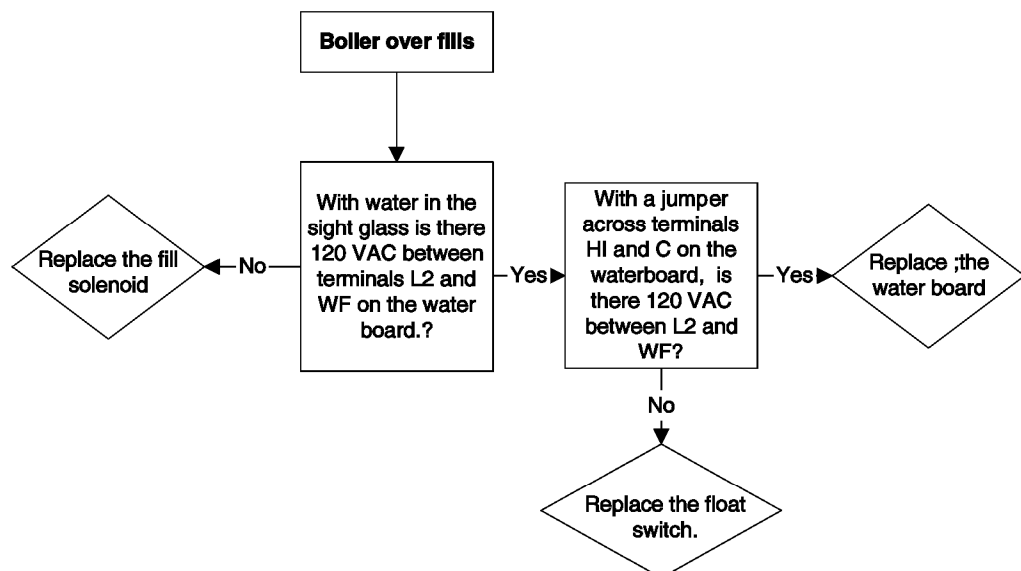
**PROBLEM:
24CGP10
Gas boiler
won't fill**



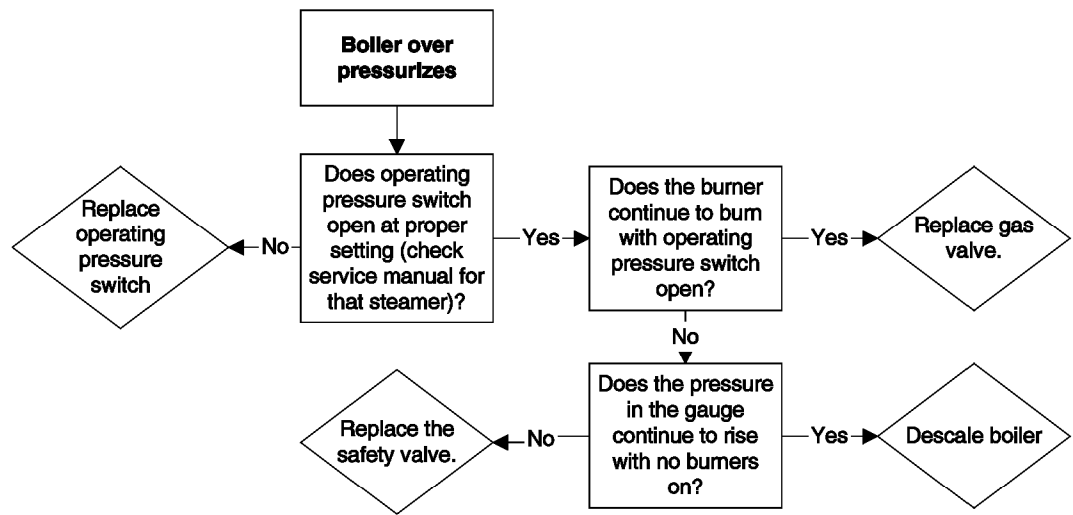
PROBLEM:
24CGP10
Gas boiler
won't ignite



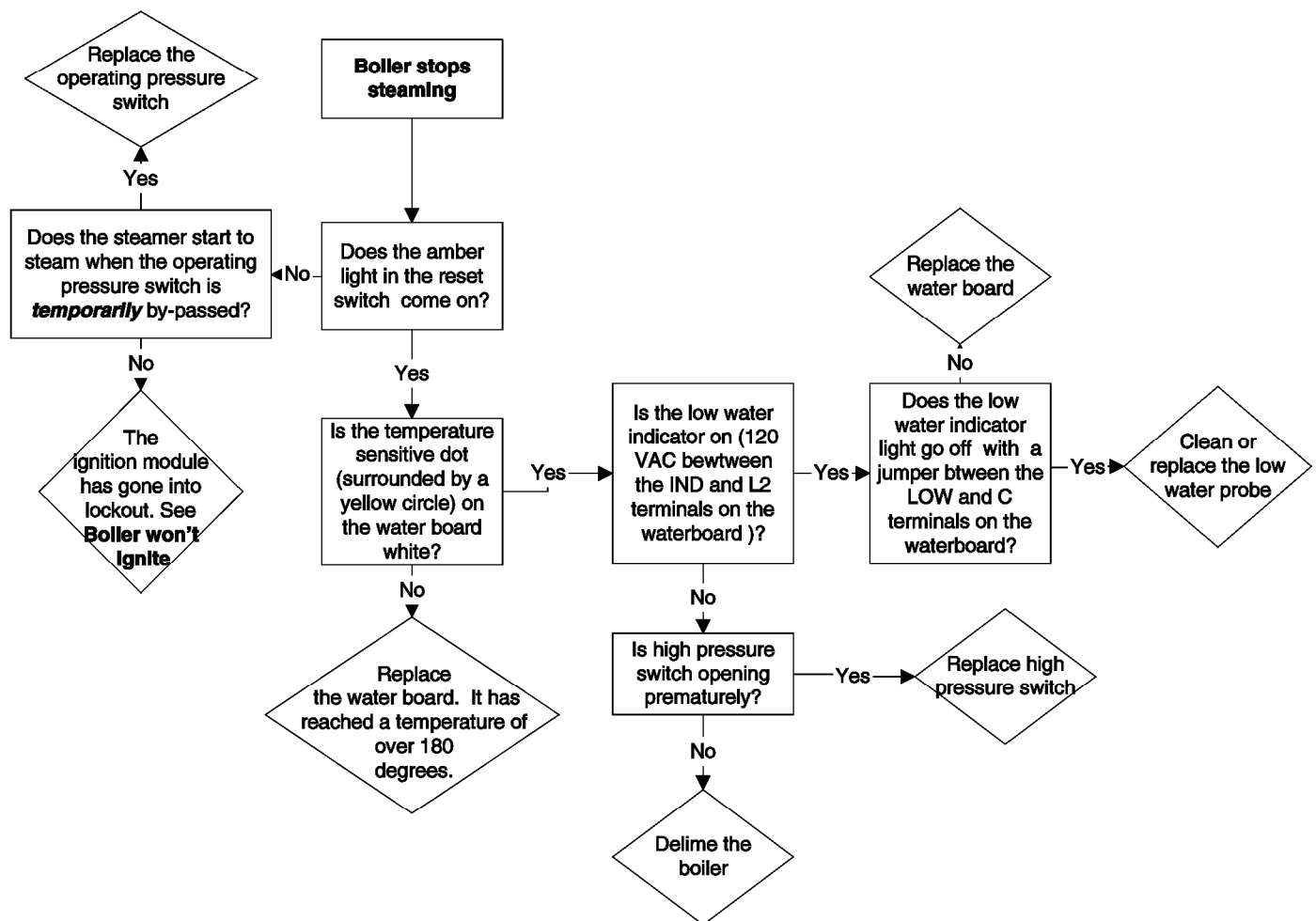
PROBLEM: 24CGP10 Gas Boiler Overfills



PROBLEM:
24CGP10
Gas Boiler Over
Pressurizes
(15# Safety
valve opens)



PROBLEM: 24CGP10 Gas Boiler Stops Producing Steam



DESCALING INSTRUCTIONS

Steamcraft Power 10
uses Kit P/N: 107142

PRELIMINARY PROCEDURE

- 1) Start with the unit turned off & completely cool.
The boiler will drain for approximately 3 minutes.
- 2) Remove the lower front panel. There are 2 screws holding this panel in place.

GAS BOILER, ORIGINAL P10 (DETAIL "A")

- 1) Check that both ball valves are closed prior to removing the plug on both the inlet (left side) & outlet (right side) ports.
- 2) Attach the 3-inch nipples with attached unions to the inlet & outlet ports.
- 3) Install the 1/2 inch hose with the attached union to the inlet port.
- 4) Install the the 3/4 hose with the attached union to the outlet port.
- 5) Open the sliding view port on the right side panel of the unit. This will expose the float.
- 6) Fill the 5 gallon bucket with 2 gallons of descaler & 3 gallons of water.
- 7) Open the inlet & outlet ball valves attached to the unit. Turn the unit on.
- 8) Turn on the descaler pump & open the inlet valve to the boiler. Let the boiler fill with descaler just above the top of the float. This can be determined by watching the level rise in the float.

1333 East 179th Street
Cleveland, Ohio 44110

Phone: (216) 481- 4900
Fax: (216) 481- 3782



Part No. 260ALQ - E 4/03

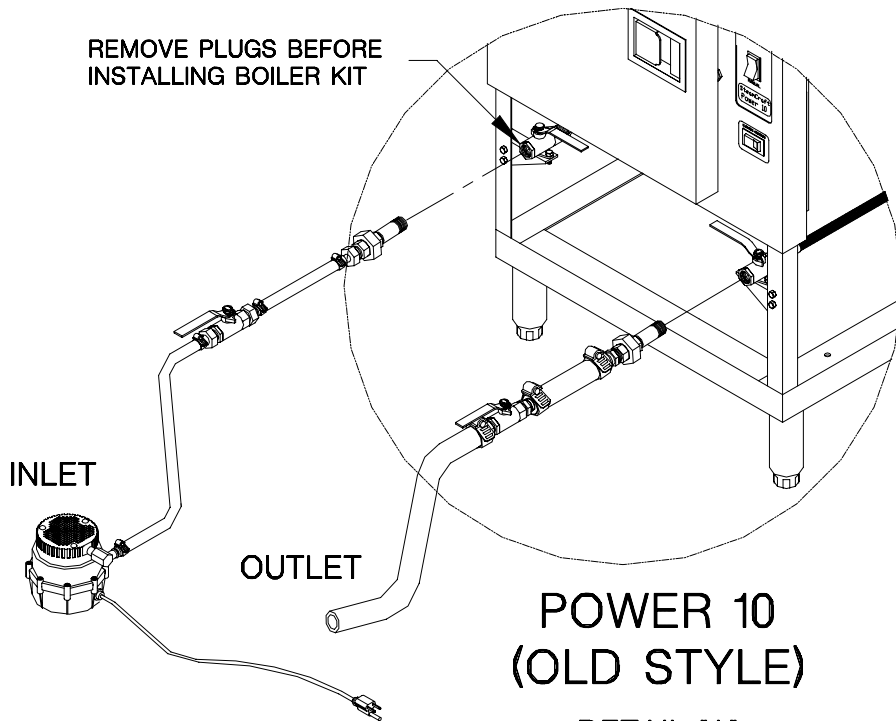
- 9) As the descaler level in the bucket drops, add water so the pump remains submerged.
Note: Liquid level in the descaler bucket should not go below the pump.
- 10) When the descaler reaches the required level, open the exit valve. make sure the exit line is the bucket. The required level can be maintained by controlling the flow with the ball valves.
- 11) Let the pump operate for 1 hour.
- 12) After 1 hour, turn the pump off & close the inlet ball valve. Turn the main switch to off and let drain.
- 13) Flush the boiler with water when all of the descaler has drained.
- 14) Turn the unit on to fill with water.
 - Fill the 5-gallon bucket with water.
 - When the water level reaches the middle of the sight glass, turn on the pump & open the inlet valve.
 - Make sure the outlet valve is closed.
- 15) Let the water level rise above the top of the float.
- 16) Open the outlet valve making sure the hose from the outlet valve is in the drain and not the bucket.
- 17) Continue flushing with water for 5 minutes.
Note: Additional water may have to be added to the bucket.
- 18) When flushing is complete, close the 2 ball valves attached to the unit and turn the unit off.
- 19) Replace the plugs in the ball valves & re-install the lower panel.
- 20) The unit is now ready for use.

GAS BOILER, CURRENT P10 (DETAIL "B")

- 1) Remove the plugs.
- 2) Attach the 3-inch nipples with attached unions to the inlet & outlet ports.
- 3) Install the 1/2 inch hose with the attached union to the inlet port.
- 4) Install the the 3/4 hose with the attached union to the outlet port.
- 5) Open the sliding view port on the right side panel of the unit. This will expose the float.
- 6) Fill the 5 gallon bucket with descaler.
- 7) Turn the unit on.

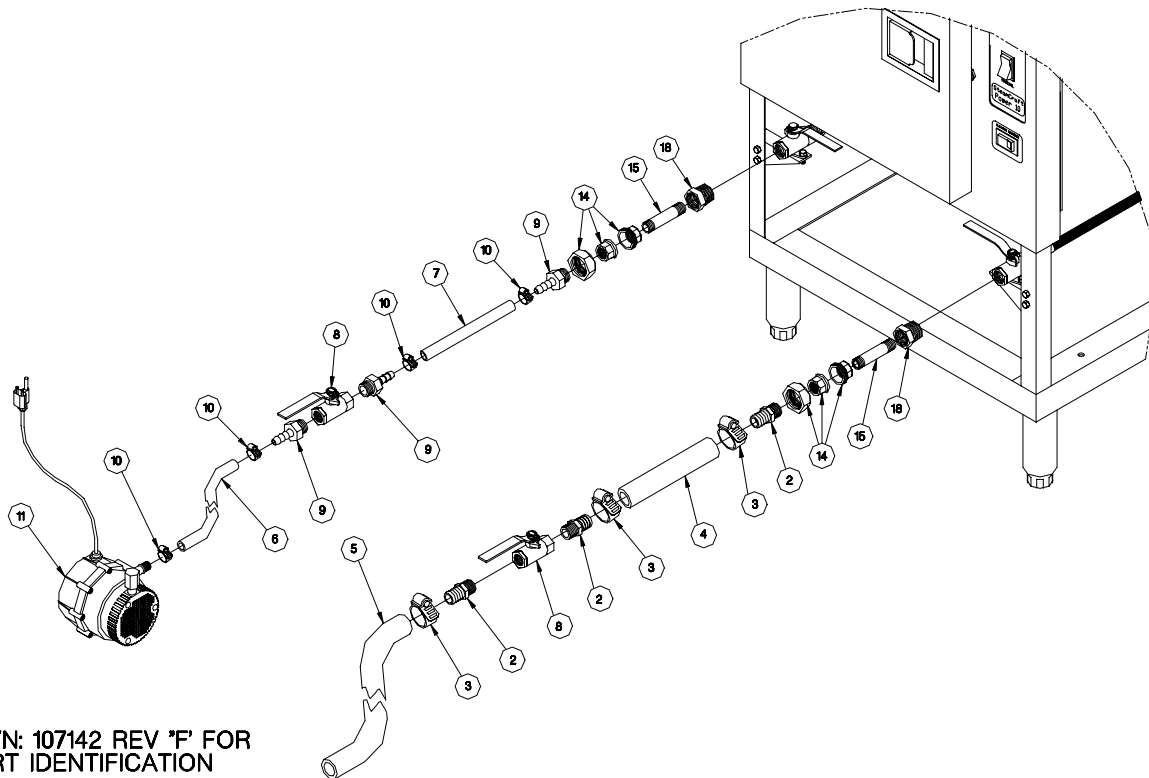
- 8) Turn on the descaler pump. Let the boiler fill with descaler just above the top of the float. This can be determined by watching the level rise in the float.
- 9) As the descaler level in the bucket drops, add water so the pump remains submerged.
Note: liquid level in the descaler bucket should not go below the pump.
- 10) When the descaler reaches the required level, make sure the exit line is in the bucket with the pump. The required level can be maintained by controlling the flow with the ball valves.
- 11) Let the pump run for 1 hour.
- 12) After 1 hour, turn the pump off. Also, turn the main switch to off and let drain.
- 13) Flush the boiler with water when all of the descaler has drained.
- 14) Turn the unit on to fill with water.
 - Fill the 5-gallon bucket with water.
 - When the water level reaches the middle of the sight glass, turn on the pump & open the inlet valve.
 - Make sure the outlet valve is closed.
- 15) Let the water level rise above the top of the float.
- 16) Open the outlet valve making sure the hose from the outlet valve is in the drain and not the bucket.
- 17) Continue flushing with water for 5 minutes.
Note: Additional water may have to be added to the bucket.
- 18) When flushing is complete, turn the unit off.
- 19) Replace the plugs & re-install the lower panel.
- 20) The unit is now ready for use.

REMOVE PLUGS BEFORE
INSTALLING BOILER KIT



DETAIL 'A'

DESCALING KIT



SEE P/N: 107142 REV 'F' FOR
PART IDENTIFICATION

REMOVE PLUGS BEFORE
INSTALLING BOILER KIT

INLET

OUTLET

POWER 10
(CURRENT)

DETAIL "B"

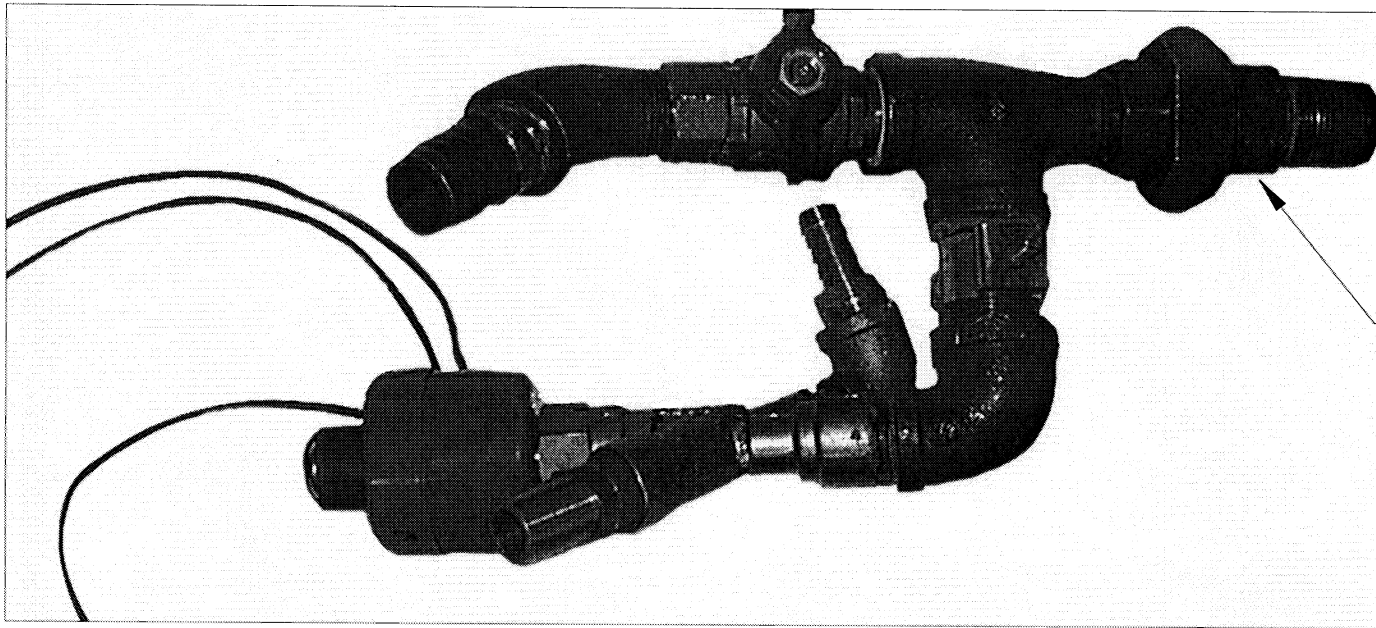
DESCALING KIT

SEE P/N: 107142 REV "F" FOR
PART IDENTIFICATION

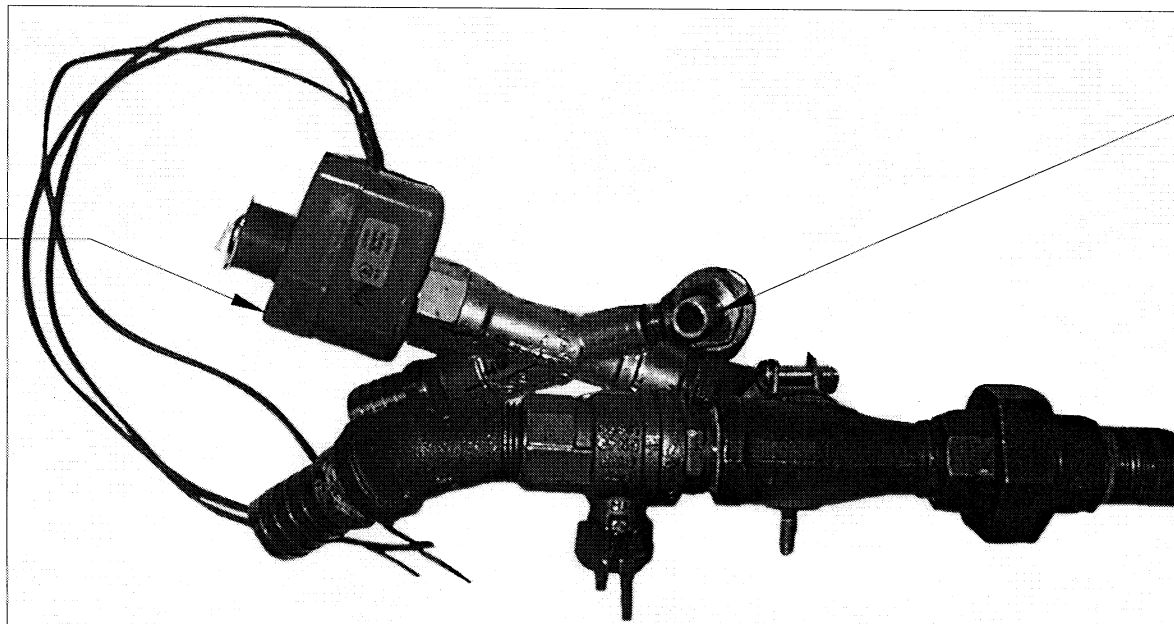
STEAMCRAFT 10 DESCALING KIT PART LIST

(P/N: 107142)

ITEM	PART #	DESCRIPTION	QTY
1	437481	Plate Ass'y, Handhole w/Descaler Port	1
2	06241	Fitting, Hose Barb, 3/4 H x 1/2 MPT	3
3	03204	Clamp, Hose, Worm Drive	3
4	1088190600	3/4 Hose For Descaling Syst, 6.000" Lg	1
5	1088193600	3/4 Hose For Descaling Syst, 36.000" Lg	1
6	1088203600	1/2 Hose For Descaling Syst, 36.000" Lg	1
7	1088200600	1/2 Hose For Descaling Syst, 6.000" Lg	1
8	22212	Valve, Ball, 1/2 Female	2
9	06237	Fitting, Hose, Barb, 1/2H X 1/2 MPT	3
10	106219	Clamp, Hose Worm Drive	4
11	107131	Pump, Submersible, Boiler Descaler Kit	1
12	07106	Gasket, Handhole	1
13	107199	Bucket W/Lid, 5 Gallon	1
14	23103	Union, 0.500, Brass	2
15	14331	Nipple, 0.500 NPT x 2.500 Lg, Sch 40	2
16	108815	Label, Descaling System	1
17	108845	Envelope, Vinyl, 10" x 13", Short Side Opening	1
18	02566	Bushing, Reducing, 3/4 x 1/2	2
19	41943	Plate Ass'y, Mounting, Weldment	1
20	260 ALK	Instructions, Descaling Installation	1
21	260 ALP	Instructions, Piping Conversion	1



INSTALL NIPPLE AND HALF OF UNION IN OPEN PORT
ON THE GENERATOR - REFER TO SHEET 6 FOR
ORIENTATION OF VALVE ASSEMBLY



CONNECT GENERATOR WATER FEED HOSE HERE
(INSTRUCTION 10)

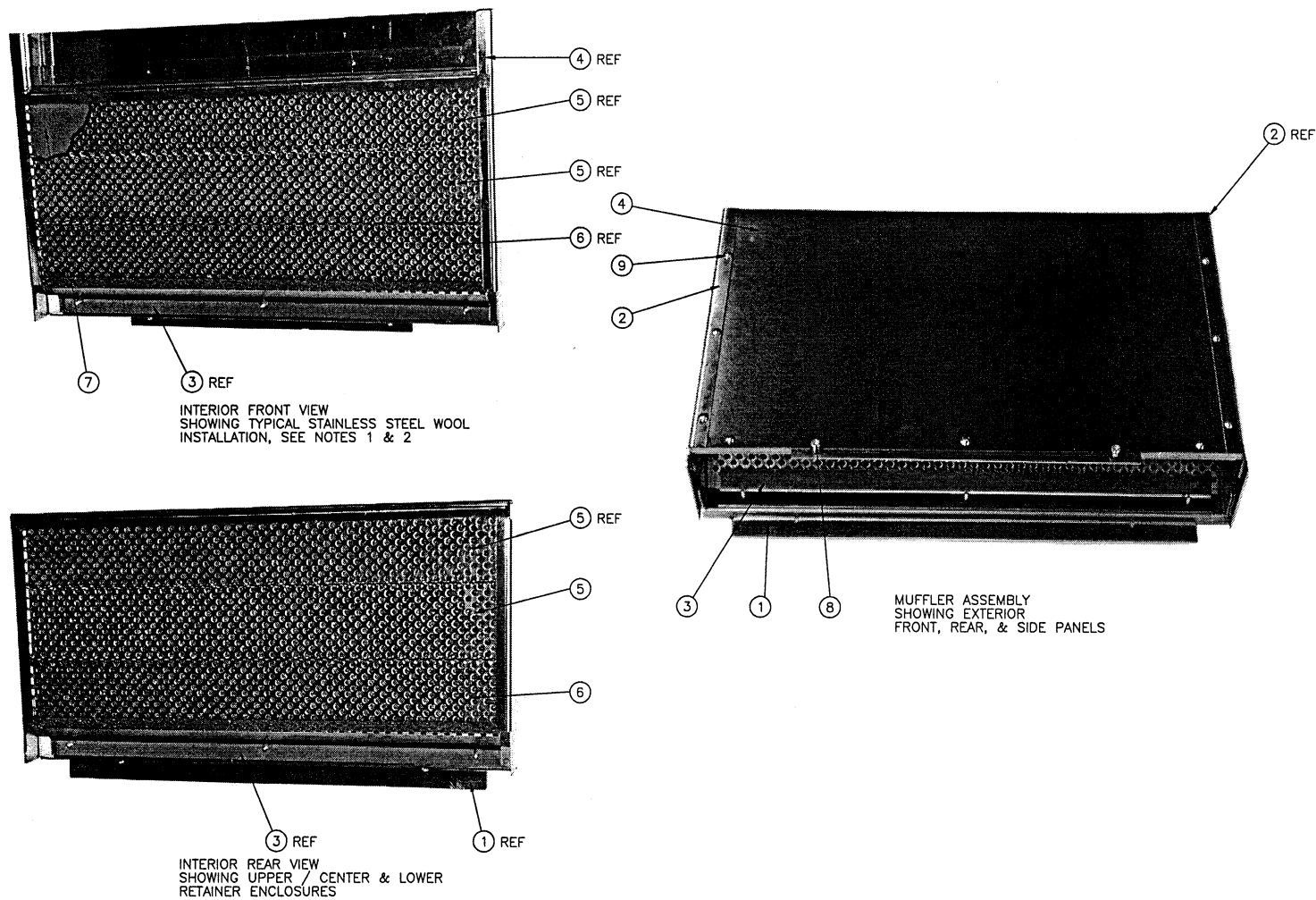
PART NO. 22221

ITEM	QTY	PART NO.	DESCRIP
CLEVELAND RANGE <small>1333 East 179th St. Cleveland, Ohio</small>			
TOLERANCES (EXCEPT AS NOTED)			
DECIMAL ± N/A	SCALE N/A	DRAWN BY YA	
ANGLES	TITLE DRAIN VALVE CONVEI STEAMCRAFT POWER		
DATE 10-01-99	DRAWING NO. D- 260 ATA		

NOTES:

- 1) CUT STAINLESS STEEL WOOL TO 10 FOOT LENGTHS, QTY 6 REQD, START FOLD @ 21.000 INCHES FROM EDGE, CONTINUE TO FOLD OVER APPROXIMATELY 4 FULL FOLDS.
- 2) SST WOOL TO BE COMPRESSED IN ALL DIRECTIONS TO FIT INTO UPPER AND LOWER RETAINER ENCLOSURES.

REV.	REVISIONS	DATE	BY
A	PRODUCTION RELEASE, PER EOM C-5375H1	10-18-99	R.B.

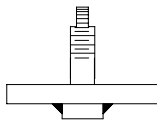
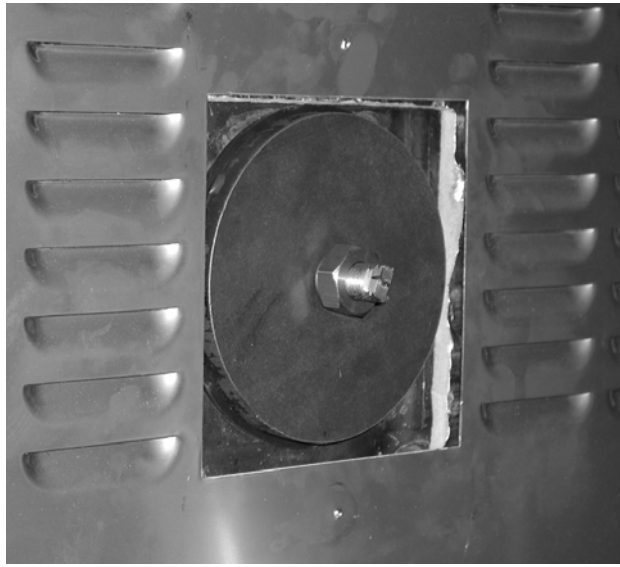


REV.	QTY	PART NO.	DESCRIPTION
5	18	104080	SCREW, TR. PANL, #6 X 1/2, TYPE A, SST
6	4	104123	SCREW, 10-32 X 0.500, TORX / PAN HD
7	5	109461	WOOL, STAINLESS STEEL
8	2	105592	RETAINER ENCLOSURE, LOWER
5	4	105591	RETAINER ENCLOSURE, UPPER / CENTER
4	1	109456	WELDING, P-10 MUFFLER FRONT PANEL
3	2	109454	RETAINER, LOWER ENCLOSURE FRONT / REAR
2	2	109348	P-10 MUFFLER SIDE PANEL
1	1	109347	P-10 MUFFLER REAR PANEL
TOLERANCES			
UNLESS OTHERWISE SPECIFIED			
1321 (Rev. 1789) B. Cleveland, Ohio 44116-1074			
DECIMAL	SCALE	INCHES	BY INCHES
± .001	1/8"	1/8"	1/8"
ANGULAR	1"	1"	1"
P-10 MUFFLER, ASSEMBLY			
DATE	10-18-99	REVISION NO.	D-109593
AC			BY A

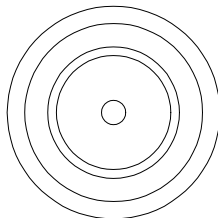
Installation Instructions

For P/N 110329

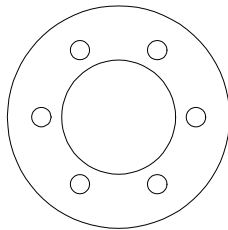
Replacement Boiler Inspection Cover Assembly for the Power 10



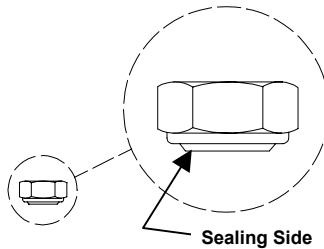
1 – Cover Brace



2 – Inspection Cover



3 – Gasket



4 – Sealing Nut
(Shown enlarged)

Parts List Replacement P-10 Boiler Inspection Cover
1 – P/N 110316 Cover Brace
2 – P/N 110315 Inspection Cover
3 – P/N 110248 Gasket
4 – P/N 110330 Sealing Nut

1333 East 179th Street
Cleveland, Ohio 44110

Phone: (216) 481-4900
Fax: (216) 481 3782

 **Cleveland**

Replacement Instructions Rear Inspection Plate.

- 1) Start with the unit turned off and completely cool. Before starting this process, verify that the Power switch is in the OFF position, the boiler is completely cool and the pressure gauge adjacent to the power switch is not showing any pressure in the boiler.
- 2) Remove the Rear Cover Panel (See Figure 1). If the unit being worked on does not have a Rear Cover Panel, remove the rear panel itself.
- 3) If the unit is already equipped with a boiler inspection cover of the type shown on the front cover of this instruction, remove the old cover and go directly to Step 7.
- 4) Before the new inspection cover can be installed it will be necessary to first remove the old cover plate and then “prepare” the boiler for installation of the new cover.

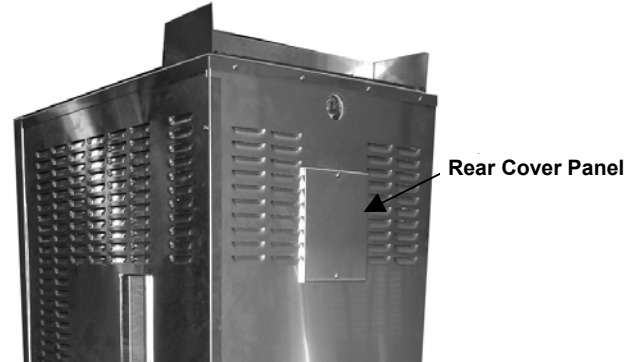


Figure 1 Rear Cover Panel

Preparing the Boiler for the New Inspection Cover

- 5) Remove the six nuts holding the old inspection cover in place (do not discard these nuts as they will be needed in a later step). Next remove the existing inspection cover and gasket.

- 6) The studs, which held the old inspection cover in place, will need to be removed (shortened). The best way to shorten these studs is to place the nuts (removed in Step 5) onto the exposed stud (see Figure 2). Tighten the nut down onto the stud with a wrench or socket until it threads flush with the weld base of the stud. Continue to tighten the nut until the stud breaks. Providing the remaining stud is not higher than $\frac{1}{4}$ inch, no additional conditioning of the stud base is necessary. If the remaining base of the stud is still higher than a $\frac{1}{4}$ inch, file down its height until the top is no more than a $\frac{1}{4}$ inch above the plate.

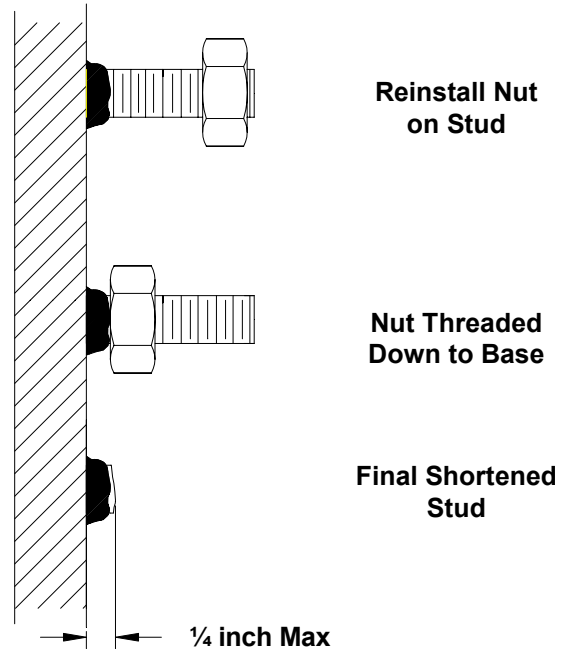


Figure 2 Stud Removal

⚠ WARNING

Do not use any method of stud removal such as grinding, which might damage or gouge the boiler face itself. Such damage to the boiler could result in failure of the pressure vessel and cause premature equipment failure, property damage, personal injury and/or death.

- 7) Remove any excess scale and loose material around the inside and outside of the inspection opening using a scraper and a wire brush (See Figure 3). **DO NOT USE ANY POWERED GRINDING METHOD TO CLEAN THESE SURFACES, WHICH MIGHT REDUCE THE ACTUAL BOILER WALL THICKNESS.**

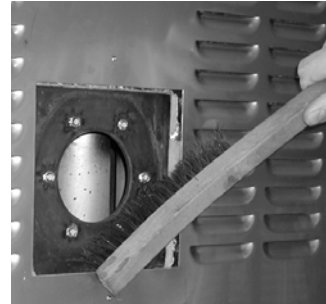


Figure 3 Cleaning the Boiler Surface

- 8) The new boiler inspection cover has a centering plug to insure that it is properly located when installed into the inspection port. To prepare the opening itself, lightly tap the edge of the boiler opening and/or use emery cloth to remove any build-up that would effect the roundness of the opening or reduce the diameter of the opening. The opening must be sufficiently cleared as to easily allow the insertion of the centering plug of the new inspection cover. (see Figure 4)



Either Tap Lightly with a Hammer and/or use Emery Cloth to Remove Build-Up in the Opening Itself

Figure 4 Cleaning the Inside of the Boiler Opening

Installing the New Inspection Cover

- 9) Insert the cover brace into the opening (See Figure 5). It is designed so that it cannot fall down into the boiler during the installation process, so this is not a concern when installing or removing this cover.



Figure 5 Cover Brace

- 10) Place the gasket over the centering plug of the new inspection cover (See Figure 6). Place the inspection cover with the gasket side down, oriented as shown in Figure 6, onto the boiler brace bolt and start the sealing nut (gasket side down, see Figure 7) provided onto the bolt.

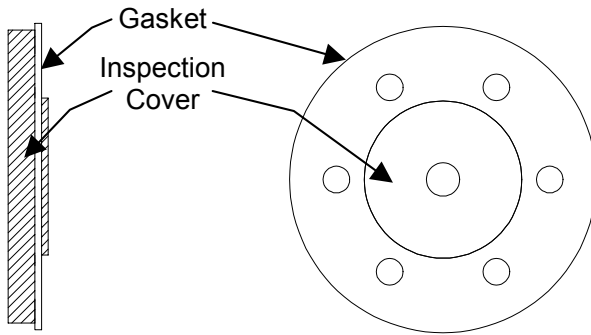


Figure 6 Gasket and Cover

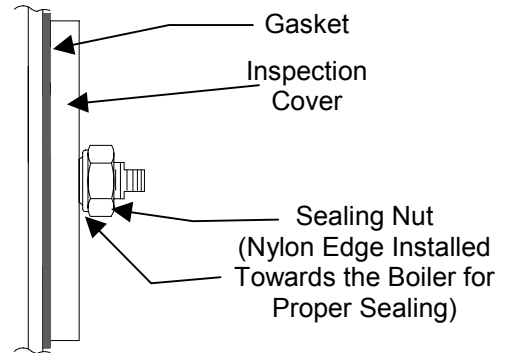


Figure 7 Sealing Nut Direction

⚠ IMPORTANT

In order for the sealing nut provided to properly seal, the nylon side of the nut must be installed against the inspection plate cover (see Figure 7).

- 11) Before tightening the sealing nut, position the plate such that the assembly fits flush onto the boiler face and does not rock. It may be necessary to turn the assembly slightly to allow the clearance holes in the gasket to line up over the stubs left from the old mounting studs.
- 12) Tighten the nut hand tight until it clears the end portion of the bolt, which is provided with a flat. It will probably be necessary to grab the flat end on the bolt with a wrench or pair of pliers (see Figure 8), to prevent the assembly from spinning, before attempting to complete the tightening process. Tighten the nut onto the bolt until it becomes snug. **DO NOT OVER TIGHTEN THIS ASSEMBLY.**



Figure 8 Tightening the Nut

⚠ WARNING

Do not over tighten the sealing nut. Over tightening can damage the boiler head and the brace assembly, which may prevent the assembly from sealing and/or cause premature equipment failure, property damage, personal injury and death.

Test procedure (See the operating label found on the unit for additional details of the start-up procedure for the boiler)

- 13) Turn on the main power switch to the boiler, which will fill the unit with water.
- 14) Turn the individual control compartments to the timed (with the timers zeroed) or OFF position, depending on model.
- 15) Once the unit is filled with water, press the amber-lighted steam switch. The boiler will light and come up to pressure. When the burners turn off, the boiler should now be at operating pressure (the steam pressure gauge should read about 12 psi).
- 16) Check the inspection opening for any signs of leaks. If a leak is observed, put a wrench onto the nut (holding the flat of the bolt if necessary to prevent the assembly from spinning) and turn the nut tighter.

Note: If the nut bottoms out, and the assembly continues to leak even after the nut seems completely tight, DO NOT CONTINUE TO TIGHTEN. Turn OFF the main power switch, and allow the unit to cool. Remove the nut, and put a bead of high temperature silicone around the threads at the sealing surface. Reinstall the nut as shown in Figure 7. Repeat Steps 12 – 16.

- 17) Once the seal of the new inspection plate has been checked, turn off the power to the unit and allow the unit to cool. If the original steamer had an opening in the rear panel for inspection plate access, go to Step 19, otherwise it will be necessary to cut a clearance opening in the rear sheeting.
- 18) If your steamer does not currently have an inspection opening in the rear panel it will be necessary to fashion a clearance opening in this panel to clear the mounting bolt of the new rear inspection cover for the boiler. Cut at least a 2" diameter or larger opening 11 1/8" in from the top of the rear panel centered in the middle using a Greenlee knockout punch or similar method (See Figure 9 on the following page). Alternatively, a rectangular cutout as shown in Figure 9 in dotted lines can also be used. Be sure to remove any burrs or sharp edges left in the new opening from the cutting operation.

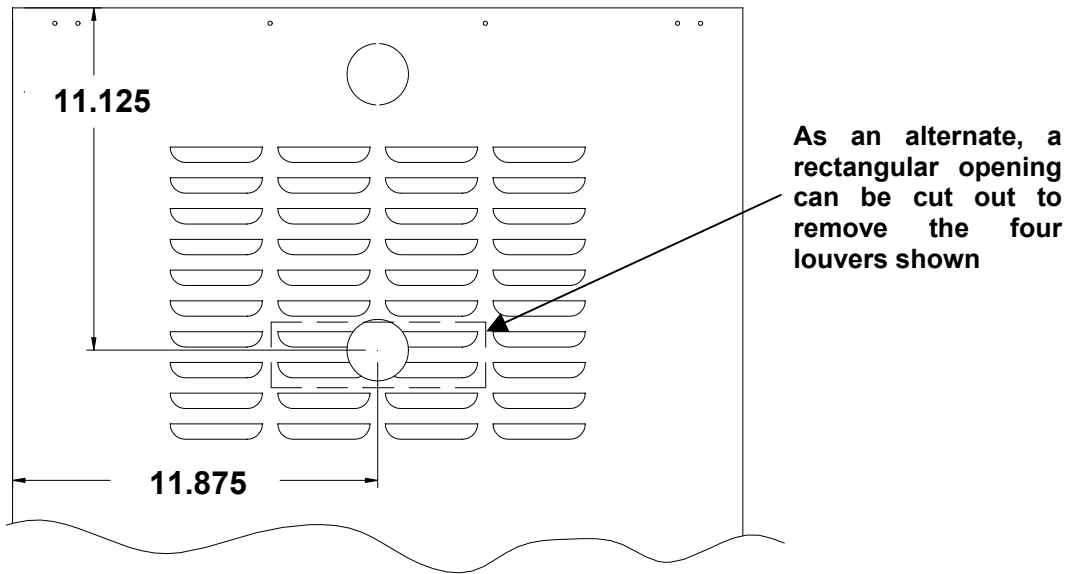


Figure 9 Rear Panel Modification

19) Reinstall any panels that were removed to install the new boiler inspection cover. If your steamer had a rear cover panel installed on the rear sheeting, this can either be left off the unit once the new boiler cover is installed or modified by installing a clearance hole to clear the bolt. See Figure 10.

20) The Steamer is now ready for operation.

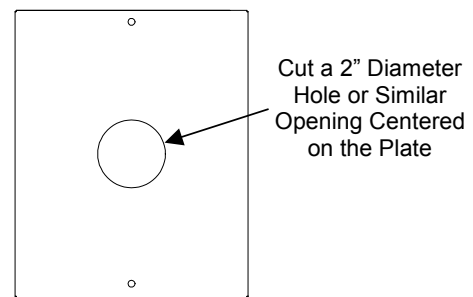
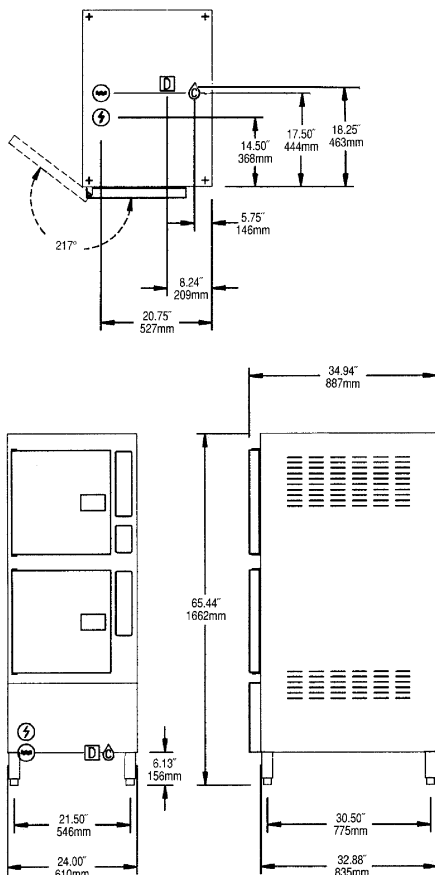


Figure 10 Modifying the Rear Cover Panel

SteamCraft® Ultra 10 D

TWO COMPARTMENT FLOOR MODEL DESIGN
PRESSURELESS CONVECTION STEAMER
Direct Steam, 24" Wide Design



UTILITY CONNECTIONS

- (A) Electrical Supply
- (B) Water Supply for Condenser 3/8" Dia. IPS
- (C) Steam Supply: 0.75" (19mm) Dia.
- (D) Drain: 1.50" (38mm) Dia.

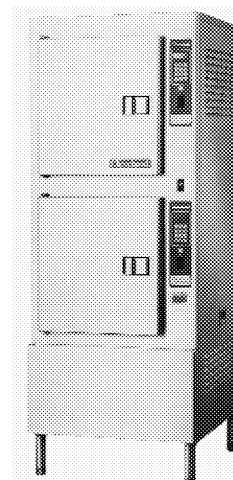
TOTAL CAPACITY (2 Compartments)

- 10 — 12" x 20" x 2 1/2" Cafeteria Pans or
- 20 — 12" x 20" x 1" Cafeteria Pans or
- 6 — 12" x 20" x 4" Cafeteria Pans

MODEL: ☐ 24-CDP-10

ITEM NUMBER _____

JOB NAME / NUMBER _____



Shown with optional
Electronic Timer

SHORT FORM SPECIFICATION

Shall be CLEVELAND, SteamCraft® Ultra 10, two compartments, Direct Steam Floor Model Steamer, Model 24-CDP-10, single, large capacity Pressureless Convection Steamer. Choice of Compartment Controls, Manual By Pass Operation Mode, Compensating Thermostat, Patented Cold Water Condenser design, Type 430 Stainless Steel exterior and cooking compartments.

WATER QUALITY REQUIREMENT

The quality of water varies greatly from region to region. Steam equipment must be blown down daily and chemically descaled periodically to ensure proper operation. To minimize service problems caused by the accumulation of minerals and chemicals in water, review the following quality guidelines with a local water treatment specialist. Inlet water that is beyond these specified guidelines should be treated to achieve the acceptable limits.

TOTAL DISSOLVED SOLIDS	less than 60 parts per million
TOTAL ALKALINITY	less than 20 parts per million
SILICA	less than 13 parts per million
pH FACTOR	greater than 7.5
CHLORINE	less than 30 parts per million

A typical water quality analysis can be secured from your local water district. Water that is potable does not guarantee compatibility with steam equipment.

DIRECT STEAM <input type="radio"/>	ELECTRIC <input checked="" type="radio"/>	COLD WATER <input checked="" type="radio"/>	DRAINAGE <input type="checkbox"/>
Steam supply: Furnish 3/8" IPS minimum line. 20 to 50 psi minimum required. For pressures between 50 to 120 psi, on additional Pressure Reducing Valve must be specified.	115V - 1 Phase Controls - 51 Watts	35 psi minimum 60 psi maximum <input checked="" type="radio"/> 3/8" Dia. IPS for Condenser	1 1/2" Dia. Do not connect other units to this drain. Drain line must be vented. No PVC pipe for drain.

Cleveland Range reserves right of design improvement or modification, as warranted.

Cleveland Range, LLC
Ph: 1-216-481-4900 Fx: 1-216-481-3782

1333 East 179th St., Cleveland, Ohio, U.S.A. 44110
Visit our Web Site at www.clevelandrange.com

Cleveland Training Notes

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings on the page.